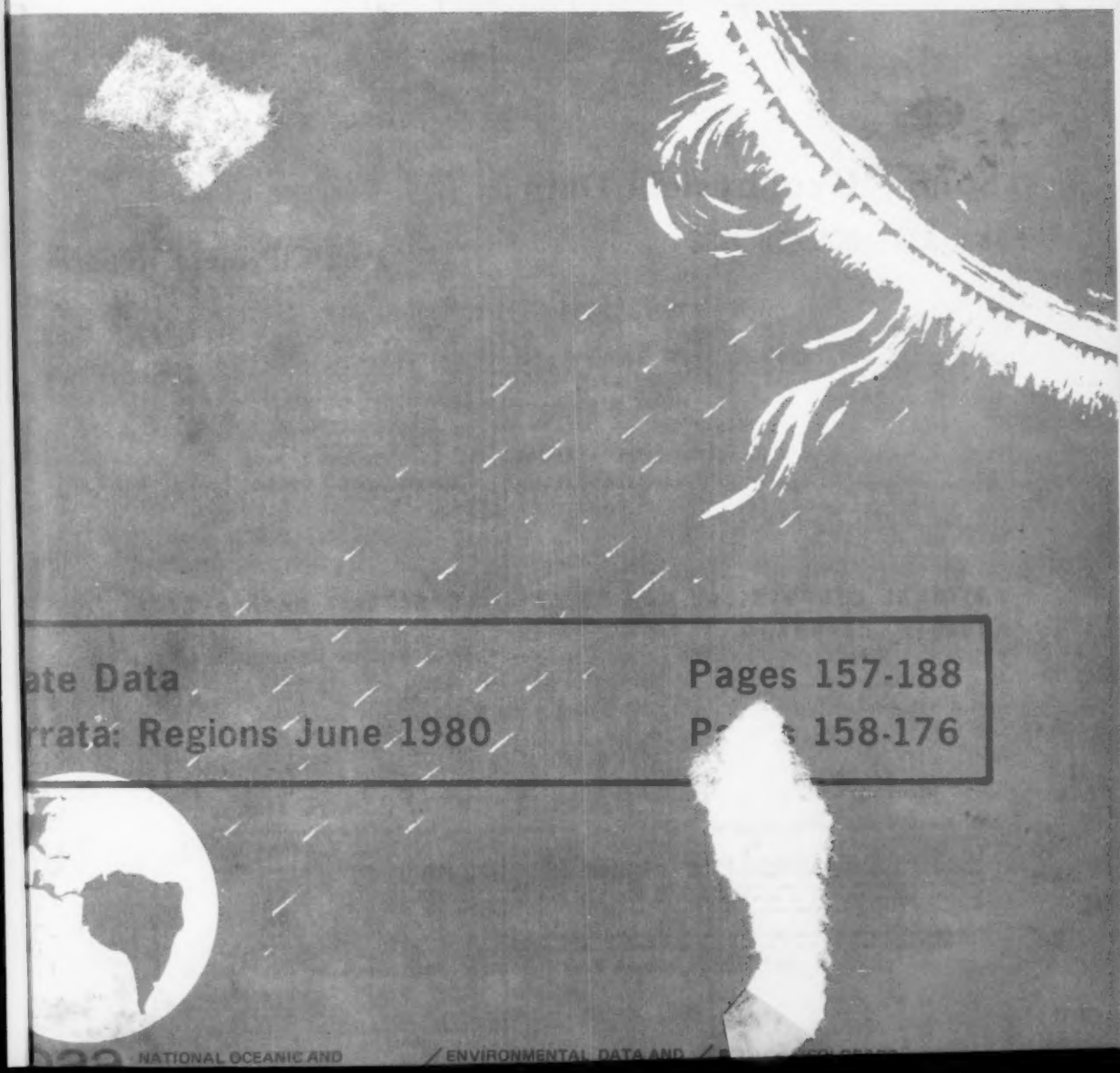
Astronomy
QB1.U57
No434
pt1

TOBER 1980 · NUMBER 434 -- Part I R-A STACKS

olar-Geophysical Data
prompt reports

a for September 1980, August 1980 & Late Data
anation of Data Reports Issued as Number 426 (Supplement) February 1980



ate Data Pages 157-188
rrata: Regions June 1980 P s 158-176

NATIONAL OCEANIC AND / ENVIRONMENTAL DATA AND

U.S. DEPARTMENT OF COMMERCE
Philip M. Klutznick, Secretary
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Richard A. Frank, Administrator
ENVIRONMENTAL DATA AND INFORMATION SERVICE
Thomas D. Potter, Director

Solar - Geophysical Data

NO. 434 OCTOBER 1980

Part I (Prompt Reports)

DATA FOR
SEPTEMBER 1980
AUGUST 1980

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

For obtaining bulletins on a data exchange basis, send request to: World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Colorado 80303.

For sale through the National Geophysical and Solar-Terrestrial Data Center, NOAA, Boulder, CO 80303. Subscription Price: $40.00 annually for both part I (Prompt Reports) and part II (Comprehensive Reports) or $21.00 annually for either part. Annual supplement containing explanation is included. For foreign mailing add $32.00 for both parts or $16.00 for either part. Single issue price is $1.75 for either part and $1.50 for the extra issue. Make checks and money orders payable to: Department of Commerce, NOAA/NGSDC. Note: $2.00 handling charge per order.

To standardize referencing these reports in the open literature, the following format is recommended: Solar-Geophysical Data, 426 Part I (or Part II), pages, February 1980, U.S. Department of Commerce (Boulder, Colorado, U.S.A. 80303).

SOLAR-GEOPHYSICAL DATA

No. 434

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

CONTENTS

Part I (Prompt Reports)

PAGE

Index for 1979-1980 2

Data for September 1980 3-40

Data for August 1980 41-155

Late Data 157-188
Daily Solar Activity Centers Errata: Regions June 1980
Solar Radio Emission Spectral July 1980
Cosmic Rays Alert/ Deep River July 1980
Geomagnetic Indices
Hourly Equatorial Dst Values June - July 1980
Sudden Commencements July 1980

Part II (Comprehensive Reports)

Index for 1979-1980 2

Data for April 1980 3-10
Note on Delay of Solar Flare Data 4

Miscellaneous Data 11-57
Synoptic Solar Maps Nov 30, 1979 - Jan 24, 1980
Active Regions Dec 27, 1979 - Jan 24, 1980
Solar Flares July 1979
Energetic Solar Particles Dec 1979
IMP 8 Electrons, Protons and Alpha Particles
Regional Flare Index June 1979
Mass Ejections from the Sun March 1980

GENERAL BOOKBINDING CO.
81 2 1 2002

DETAILED COVERAGE FOR 1979-80 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1979 Sep	Oct	Nov	Dec	1980 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
A.	SOLAR AND INTERPLANETARY PHENOMENA												
A.1	Sunspot Drawings	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.2a	Zurich Provisional Relative Sunspot Numbers Rz	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11
A.2b	Zurich Final Sunspot Numbers Rz	428A 9	428A 9	428A 9	428A 9								
A.2c	American Relative Sunspot Numbers RA	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11
A.3a	Mt. Wilson Magnetograms	423A 50	424A 50	425A 48	426A 50	427A 50	427A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	423A110	424A112	425A108	428A150	427A112	428A102	429A104	430A112	431A110	432A110	433A110	434A108
A.3c	Kitt Peak Magnetograms	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.3d	Mean Solar Magnetic Field (Stanford)	422A 42	423A 40	424A 40	425A 36	426A 38	427A 38	428A 34	429A 35	430A 41	431A 41	432A 42	433A 40
A.3e	Stanford Magnetograms	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.4	H-alpha Filtergrams	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.5	Calcium Plage Drawings - Mt. Wilson	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.5a	Calcium Plage (Mt. Wilson) and Sunspot Regions	423A110	424A112	425A108	428A150	427A112	428A102	429A104	430A112	431A110	432A110	433A110	434A108
A.5b	Mt. Wilson Daily Calcium Plage Indices	423A124	424A125	425A121	426A112	427A122	428A112	429A115	430A123	431A121	432A128	433A127	434A125
A.6	H-alpha Synoptic Charts	423A 44	424A 44	425A 40	426A 42	427A 42	428A 38	429A 39	430A 44	431A 44	432A 46	433A 44	
A.6b	Synoptic Chart and Active Regions (Paris)	429B 34	430B 30	431B 42	432B 43	434B 14							
A.6c	Stanford Solar Magnetic Field Synoptic Charts	423A 46	424A 46	425A 42	426A 44	427A 44	428A 40	429A 40	430A 49	431A 45	432A 47	433A 45	434A 43
A.6d	Kitt Peak Solar Magnetic Field Synoptic Charts	423A 48	424A 48	425A 44	426A 46	427A 46	428A 42	429A 41	430A 50		432A 48	433A 46	434A 44
A.6e	Mass Ejections from the Sun							434B 56					
A.7f	Helium D3 Chromosphere (Big Bear)	422A 38	423A 41	425B 28	425A 37	426A 39	427A 39	428A 35	429A 36	430A 41	432A167	432A 37	433A 35
A.7g	Helium Synoptic Maps (KPNO)	423B 75	425A 46	425A 47	426A 48	427A 48		431A162	430A 51	431A 46	432A 48	433A 47	434A 45
A.7h	Coronal Line Emission (Sac Peak)	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11
A.8g	Daily Values of Adjusted Solar Flux (AFGL)	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11
A.9cb	8.6 mm Radio Maps of the Sun (NOSC - La Posta)	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48		433A 48	434A 46
A.9d	2 cm Radio Maps of the Sun (NOSC - La Posta)	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48		433A 48	434A 46
A.10a	169 MHz - Interferometric Observations (Nancay)	422A 25	423A 27	424A 25	426A148	426A 23	427A 23	428A 20	429A 22	430A 26	432A166	432A 24	433A 22
A.10c	21 cm East-West Solar Scans (Fleurs)	422A 28	423A 30	424A 28	425A 27	426A 25	427A 26	429A150	429A 25	430A 29	431A 28	432A 27	433A 25
A.10d	43 cm East-West Solar Scans (Fleurs)	422A 29	423A 31	424A 29	425A 28	426A 27	427A 27	429A151	429A 26	430A 30	431A 29	432A 28	433A 26
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	422A 27	423A 29	424A 27	425A 26	426A 25	427A 25	428A 22	430A175	430A 28	431A 27	432A 26	433A 24
A.10f	3 cm East-West Solar Scans (Toyokawa)	422A 26	423A 28	424A 26	425A 25	426A 24	427A 24	428A 21	429A 23	430A 27	431A 26	432A 25	433A 23
A.11g	Solar X-ray (SMS/GOES) (graphs)	427B 28	428B 24	429B 26	430B 16	431B 27	432B 30	433B 26	434B 6				
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	426B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A 38	---
A.12e	Energetic Solar Particles (IMP H & J)	430B 24	429B 32	429B 37	434B 50								
A.13a	Solar Wind (Pioneers 6 & 7)	---	---	---	---	---	427A 32	428A 27	429A 32	---	431A 38	432A 39	433A 36
A.13ab	Solar Wind (Pioneers 8 & 9)	426B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A 38	433A 37
A.13d	Solar Wind from IPS Measurements	422A 39	424B 36	424A 37	426A146	426A 34	427A 35	428A 30	430A164	430A 37	431A 36	432A 34	433A 31
A.13e	Solar Plasma (IMP H & J)	427B 27	429B 23	429B 25	430B 15	432B 36	432B 29		434B 5				
A.13f	Solar Wind (Pioneer 12 (Venus))	422A 37	423A 37	424A 36	425A 32	426A 33	427A 34	428A 29	429A 32	431A161	431A 39	432A 39	433A 37
A.17	Interplanetary Magnetic Field (Pioneer 9)	424B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A 38	433A 37
A.17	Interplanetary Magnetic Field (Pioneer 12)	423B 73	424B 38	425B 29	426A116	---	---	429A119	430A127	431A125	432A132	433A131	---
A.17c	Inferred IP Magnetic Field	422A 40	423A 38	424A 38	425A 34	426A 36	427A 36	428A 32	430A 42	432A 40	432A 40	433A 38	
A.18	Interplanetary Electric Field (Pioneer 9)	424B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A138	---
B.	IONOSPHERIC (AND RADIO WAVE PROPAGATION) PHENOMENA												
B.52	Graphs of Transmission Frequency Range	423A174	424A154	425A152	426A142	427A154	428A140	429A146	430A160	431A156	432A162	433A154	434A154
B.53	Quality Figures Based on Frequency Ranges	423A173	424A153	425A151	426A141	427A153	428A139	429A148	430A159	431A155	432A164	433A156	434A153
C.	FLARE-ASSOCIATED EVENTS												
C.1a	Optical Observations Flares	422A 14	423A 15	424A 15	425A 15	426A 15	427A 14	428A 15	429A 14	430A 16	431A 16	432A 16	433A 16
C.1ba	Optical Observations Flares (Standardized Data)												
C.1d	Flare Patrol Observations	423B 72	423A 26	424A 24	425A 24	427A158	427A 22	---	---	430A 46	431A 25	432A 23	433A 21
C.1d	Flare Patrol Observations												
C.1e	Flare Indices (by day)												
C.1f	Flare Indices (by Region)												
C.3	Solar Radio Waves - Outstanding Occurrences	427B 5	428B 5	429B 5	430B 5	431B 5	432B 5	433B 5					
	Solar Radio Waves - Fixed Frequencies - Selected	422A 30	423A 32	424A 30	425A 29	426A 28	427A 28	428A 23	429A 27	430A 31	431A 30	432A 29	433A 27
C.4a	Solar Radio Spectral Obs. (Fort Davis)	423A143	424A149	426A153	426A117	427A126	428A116	429A120	430A128	431A126	432A133	433A132	434A129
C.4d	Solar Radio Spectral Obs. (Culgoora)	423A143	424A130	425A125	426A117	427A126	428A116	429A120	430A128	431A126	432A133	433A132	434A129
C.4e	Solar Radio Spectral Obs. (Weissenau)	423A143	424A130	425A125	426A117	427A126	428A116	429A120	430A128	431A126	432A133	433A132	434A129
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	---	---	---	---	---	---	429A120	430A128	431A126	432A133	434A177	434A129
C.4h	Solar Radio Spectral Obs. (Dwingeloo)	424A143	425A130	426A125	427A117	427A126	429A116	439A120	430A128	431A126	433A158	433A132	434A129
C.4i	Solar Radio Spectral Obs. (Bleien)	423A143	424A130	425A125	426A117	427A126	428A116	429A120	430A128	431A126	432A133	433A132	434A129
C.4j	Solar Radio Spectral Obs. (Manila)	---	424A130	425A125	426A117	427A126	---				432A133	434A177	434A129
C.4k	Solar Radio Spectral Obs. (Learmonth)	423A143		425A125		427A126	429A116	429A120	430A128	431A126	433A158	433A132	434A129
C.4l	Solar Radio Spectral Obs. (Palehua)	423A143		425A125		427A126	428A116	429A120	430A128	431A126	433A158	433A132	434A129
C.5e	Solar X-ray (SMS/GOES) (graphs)	427B 28	428B 24	429B 26	430B 16	431B 27	432B 30	433B 26	434B 6				
C.6	Sudden Ionospheric Disturbances	423A125	424A126	425A122	426A113	427A123	428A113	429A116	430A124	431A122	432A129	433A128	434A126
D.	GEOMAGNETIC AND MAGNETOSPHERIC PHENOMENA												
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, aa, Cp	423A166	424A147	425A144	426A133	427A148	429A154	429A142	430A155	431A151	432A158	433A150	434A147
D.1ba	27-day Chart of Kp Indices	423A168	424A149	425A146	426A135	427A150	428A137	429A144	430A157	431A153	432A160	433A152	434A149
D.1c	27-day Chart of C9	426A136	426A136	426A136	426A136								
D.1ca	aa graph 1868 - present	426A137	426A137	426A137	426A137								
D.1d	Principal Magnetic Storms	423A171	424A152	425A149	426A140	427A151	428A138	429A145	430A158	431A154	432A161	433A153	434A152
D.1e	Reduced Magnetograms												
D.1f	Sudden Commencement and Solar Flare Effects	423A172	425B 33	425A150	427A164	427A152	431A168	431A168	431A169	433A168	433A168	434A188	
D.1g	Equatorial Indices Dst	423A170	424A151	425A148	426A139	428A147	429A155	431A166	431A167	433A167	434A186	434A187	
D.1h	Geomagnetic Substorm Log (Boulder)	422A 43	423A 42	424A 41	425A 38	426A 40	427A 40	428A 36	429A 37	430A 45	431A 42	432A 43	433A 41
F.	COSMIC RAYS												
F.1a	Cosmic Ray Neutron Counts (Deep River)	423A161	425B 32	427A159	427A159	428A146	429A153	429A137	430A154	432A170	433A165	434A183	434A146
F.1b	Cosmic Ray Neutron Counts (Climax)	423A161	425B 32	425A143	426A132	428A146	429A134	430A167	430A154	431A150	433A165	433A147	
F.1e	Cosmic Ray Neutron Counts (Alert)	423A161	425B 32	427A159	427A159	428A146	429A153	429A137	430A154	432A170	433A165	434A183	434A146
F.1h	Cosmic Ray Neutron Counts (Thule)	423A161	424A146	425A143	426A132	427A147	428A134	429A137	430A154	431A150	432A155	433A147	
F.1i	Cosmic Ray Neutron Counts (Kiel)	423A161	427A159	425A143	426A132	427A147	428A134	429A137	430A154	431A150	432A155	433A147	434A146
F.1j	Cosmic Ray Neutron Counts (Tokyo)	423A161	427A159	425A143	426A132	427A147	428A134	429A137	430A154	431A150	430A155	433A147	434A146
F.1k	Cosmic Ray Neutron Counts (Kula)					---	---	---	---	---	---	---	---
F.1l	Cosmic Ray Neutron Counts (Huancayo)	425B 32	425B 32	426A177	427A159	428A146	430A167	430A167	431A163	433A165			
H.	MISCELLANEOUS												
H.60	IUWDS Alert Decisions	422A 4	423A 4	424A 4	425A 4	426A 4	427A 4	428A 4	429A 4	430A 5	431A 5	432A 5	433A 5
H.62	Abbreviated Calendar Record												

Notes:

"423A 50" listed under 1979 Sep means that the sunspot drawings for Sep 1979 were contained in *Solar-Geophysical Data* Number 423 - Part I, beginning on page 50.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

SGD 434 Part I (Prompt)

SEPTEMBER 1980 DATA

Contents

	Page
Alert Periods	
IUWDS ATert Periods (Advance and Worldwide)	5-9
Daily Solar Indices	
Relative Sunspot Numbers, R_Z, and Daily Solar Flux at 2800 MHz (12 Month Tables)	10
Daily Solar Indices (Sunspot Numbers and Solar Fluxes)	11
Observed and Predicted Solar Activity Indices	12
Smoothed Observed and Predicted Sunspot Numbers	13
Graph of Observed and Predicted Sunspot Numbers	14
Graph of Superposition of Cycles 18, 19 and 20	15
Solar Flares	
H-alpha Solar Flares	16-23
Intervals of No Flare Patrol Observation	24
Solar Radio Emission	
169 MHz Solar Interferometric Chart - Nancay	25
3 cm East-West Solar Scans - Toyokawa	26
10.7 cm East-West Solar Scans - ARO, Ottawa	27
21 cm East-West Solar Scans - Fleurs	28
43 cm East-West Solar Scans - Fleurs	29
Selected Fixed Frequency Events	30-32
Selected Solar Noise Bursts	33
Solar Wind Measurements	
Interplanetary Scintillations	31-37
Coronal Holes	
Helium D3 Chromosphere (Data not available at time of publication.)	
Spacecraft Observations (Data not available at time of publication.)	
Pioneer IX	
Pioneer VII	
Pioneer XII (Pioneer Venus) Solar Wind	
Inferred Interplanetary Magnetic Field Polarities (Data not available at time of publication.)	
Mean Solar Magnetic Field	
Stanford Mean Solar Magnetic Field (Chart)	38
Stanford Mean Solar Magnetic Field (Table)	39
Geomagnetic	
Boulder Geomagnetic Substorm Log	40

PRES

03 S
04 S

04 S
08 S
08 S
25 S

SUMM

Messa... serial... numb...
245
246
247
248
249
250
251

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SEPTEMBER 1980

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

03 SEPTEMBER 1980 PRESTO TOYOKAWA 03/0521Z TENFLARE 100 UNITS 03/0405Z DURATION 19 MINUTES
04 SEPTEMBER 1980 PRESTO BOULDER 04/0228Z SOFLARE M6/2B S08W18 04/0201Z DURATION 13 MINUTES
TENFLARE 410 FLUX UNITS 04/0156Z DURATION IN PROGRESS
04 SEPTEMBER 1980 PRESTO TOYOKAWA 04/0236Z TENFLARE 430 FLUX UNITS 04/0155Z DURATION 15 MINUTES
08 SEPTEMBER 1980 PRESTO TOYOKAWA 08/0631 Z TENFLARE 140 FLUX UNITS 08/0523Z DURATION 09 MINUTES
08 SEPTEMBER 1980 PRESTO BOULDER 08/1315Z SOFLARE M8/2B S07W71 08/0530Z DURATION 80 MINUTES
25 SEPTEMBER 1980 PRESTO TOYOKAWA 24/0715Z TENFLARE 120 FLUX UNITS 24/0727Z DURATION 9 MINUTES

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions Location Lat-Long	No. of Flares Total	M	X	Outstanding events	Forecasts Date	Location Lat-Long	Desc*	Alert Situations
245	01	31	252	208	008	N27W72	0	0	0	Presto Boulder	01	N27W72	Q	SOLALERT 01/03
						N10W47	0	0	0	31/1442Z Tenflare		N10W47	Q	MAGQUIET
						S27W40	0	0	0	1100 flux units		S27W40	Q	
						N22W26	1	0	0	31/1249Z duration		N22W26	E	
						N18W05	0	0	0	10 minutes		N18W05	Q	
						N12E24	7	1	0	31/1451Z Soflare		N12E24	A	
						S08E24	5	1	0	M6/2B S05E41		S08E24	A	
						S04E35	1	0	0	31/1335Z duration		S04E35	A	
						N11E53	0	0	0	40 minutes		N11E53	Q	
						S11E61	0	0	0			S11E61	Q	
						N14E69	0	0	0			N14E69	Q	
246	02	01	285	211	010	N26W87	0	0	0		02	N26W87	Q	SOLALERT 02/05
						N10W63	1	0	0			N10W63	Q	MAGQUIET
						S27W54	0	0	0			S27W54	Q	
						N23W39	0	0	0			N23W39	Q	
						N17W18	1	0	0			N17W18	Q	
						S09E09	11	0	0			S09E09	E	
						N11E10	11	0	0			N11E10	A	
						S04E22	5	0	0			S04E22	E	
						N10E39	0	0	0			N10E39	Q	
						N21E40	1	0	0			N21E40	Q	
						S12E47	0	0	0			S12E47	Q	
						N13E55	0	0	0			N13E55	Q	
						N24E73	0	0	0			N24E73	Q	
						N16E80	2	0	0			N16E80	Q	
247	03	02	284	226	005	S15W80	0	0	0		03	S15W80	Q	SOLALERT 03/05
						N10W78	0	0	0			N10W78	Q	MAGQUIET
						S27W67	1	0	0			S27W67	Q	
						N22W53	1	0	0			N22W53	Q	
						S16W48	0	0	0			S16W48	Q	
						S08W05	11	0	0			S08W05	E	
						N11W01	5	0	0			N11W01	A	
						S06E07	0	0	0			S06E07	E	
						N20E27	1	0	0			N20E27	Q	
						S13E35	0	0	0			S13E35	Q	
						N12E42	0	0	0			N12E42	Q	
						N24E64	3	0	0			N24E64	E	
						N11E66	0	0	0			N11E66	Q	
						N15E70	5	0	0			N15E70	E	
248	04	03	277	228	012	N10W92	0	0	0	Presto Toyokawa	04	N10W92	Q	SOLALERT 04/06
						S26W79	0	0	0	03/0521Z Tenflare		S26W79	Q	MAGQUIET
						N23W63	0	0	0	100 units 03/0405Z		N23W63	Q	
						S07W17	11	1	0	Duration 19 minutes		S07W17	A	
						N11W15	6	0	0			N11W15	E	
						S05W04	0	0	0			S05W04	E	
						N21E14	3	0	0			N21E14	E	
						S12E23	0	0	0			S12E23	Q	
						N14E28	1	0	0			N14E28	Q	
						N18E37	0	0	0			N18E37	Q	
						N25E51	1	0	0			N25E51	Q	
						S27E51	0	0	0			S27E51	Q	
						N12E53	0	0	0			N12E53	Q	
						N15E57	3	0	0			N15E57	E	
249	05	04	327	221	012	N23W76	0	0	0	Presto Boulder	05	N23W76	Q	SOLALERT 05/07
						S07W32	7	2	0	04/0228Z Soflare		S07W32	E	MAGQUIET
						N12W28	9	0	0	M6/2B S08W18 04/0201Z		N12W28	E	
						S05W16	1	0	0	Duration 13 Minutes		S05W16	Q	
						N21E00	2	0	0	Tenflare 410 Flux		N21E00	E	
						S12E07	0	0	0	Units 04/0156Z		S12E07	Q	
						N13E15	0	0	0	Duration in progress		N13E15	Q	
						N18E24	1	0	0			N18E24	Q	
						N25E37	1	0	0			N25E37	Q	
						S26E38	1	0	0			S26E38	Q	
						N12E39	0	0	0			N12E39	Q	
						N15E45	1	0	0			N15E45	Q	
250	06	05	228	214	009	S07W44	2	0	0		06	S07W44	E	SOLALERT 06
						N12W40	3	0	0			N12W40	E	MAGALERT
						S05W30	1	0	0			S05W30	Q	
						N21W12	0	0	0			N21W12	Q	
						S11W06	0	0	0			S11W06	Q	
						N14E04	0	0	0			N14E04	Q	
						N18E10	0	0	0			N18E10	E	
						N25E24	0	0	0			N25E24	Q	
						S27E26	1	0	0			S27E26	Q	
						N15E31	1	0	0			N15E31	E	
251	07	06	231	208	008	S06W56	3	0	0		07	S06W56	E	SOLNIL
						N12W53	2	0	0			N12W53	E	MAGNIL
						S05W42	0	0	0			S05W42	Q	
						N22W26	0	0	0			N22W26	E	
						N16W06	0	0	0			N16W06	Q	
						N19W03	0	0	0			N19W03	Q	
						N24E09	0	0	0			N24E09	Q	
						S28E14	0	0	0			S28E14	Q	
						N13E15	1	0	0			N13E15	E	

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

SEPTEMBER 1980

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions Location Lat-Long	No. of Flares Total	M	X	Outstanding events	Forecasts Date	Location Lat-Long	Desc*	Alert Situations
						S23E63	0	0	0			S23E63	Q	
						N06E71	0	0	0			N06E71	Q	
252	08	07	203	210	009	S07W71	1	0	0		08	S07W71	E	SOLQUIET
						N11W67	1	0	0			S07W67	E	MAGQUIET
						S05W58	0	0	0			S05W58	Q	
						N22W38	5	0	0			N22W38	E	
						N16W19	0	0	0			N16W19	Q	
						N19W16	0	0	0			N19W16	Q	
						N25W02	0	0	0			N25W02	Q	
						N14E03	3	0	0			N14E03	E	
						S27E04	0	0	0			S27E04	Q	
						S22E49	0	0	0			S22E49	Q	
						N07E58	1	0	0			N07E58	Q	
						N12E81	0	0	0			N12E81	Q	
253	09	08	223	197	010	S07W85	1	1	0	Presto Soflare	09	S07W85	E	SOLQUIET
						N12W81	0	0	0	M8/2B S07W71		N12W81	Q	MAGQUIET
						S04W71	0	0	0	08/0530Z Duration		S04W71	Q	
						N23W51	2	0	0	80 minutes		N23W51	E	
						N19W30	0	0	0	Tenflare 08/0523Z		N19W30	Q	
						S11W23	0	0	0	140 flux units		S11W23	Q	
						N26W14	2	0	0	Duration 09 Minutes		N26W14	Q	
						S28W11	0	0	0			S28W11	Q	
						N14W08	3	0	0			N14W08	E	
						N05E18	0	0	0			N05E18	Q	
						N07E45	0	0	0			N07E45	Q	
						N17E68	0	0	0			N17E68	Q	
						N13E71	4	2	0			N13E71	E	
254	10	09	161	187	011	N11W91	0	0	0		10	N11W91	Q	SOLQUIET
						S05W85	0	0	0			S05W85	Q	MAGQUIET
						N23W65	3	0	0			N23W65	Q	
						N19W43	0	0	0			N19W43	Q	
						S11W39	0	0	0			S11W39	Q	
						N26W28	0	0	0			N26W28	Q	
						N14W23	4	0	0			N14W23	E	
						N09E31	0	0	0			N09E31	Q	
						N17E54	0	0	0			N17E54	Q	
						N13E58	4	0	0			N13E58	E	
255	11	10	197	186	004	N21W81	3	0	0		11	N21W81	Q	SOLQUIET
						N20W57	0	0	0			N20W57	Q	MAGQUIET
						N19W57	0	0	0			N19W57	Q	
						N08W47	0	0	0			N08W47	Q	
						N26W42	0	0	0			N26W42	Q	
						N13W38	1	0	0			N13W38	E	
						S28W35	0	0	0			S28W35	Q	
						S17W08	0	0	0			S17W08	Q	
						S26W08	0	0	0			S26W08	Q	
						N07E18	0	0	0			N07E18	Q	
						N18E42	0	0	0			N18E42	Q	
						N13E45	4	1	0			N13E45	E	
						S09E72	0	0	0			S09E72	Q	
256	12	11	168	186	006	N22W91	0	0	0		12	N22W91	Q	SOLQUIET
						N19W71	0	0	0			N19W71	Q	MAGQUIET
						S11W66	0	0	0			S11W66	Q	
						N26W54	0	0	0			N26W54	Q	
						N12W52	1	0	0			N12W52	Q	
						N07E04	0	0	0			N07E04	Q	
						N19E27	0	0	0			N19E27	Q	
						N13E31	6	0	0			N13E31	E	
						S10E31	0	0	0			S10E31	Q	
						S11E62	2	0	0			S11E62	Q	
257	13	12	194	177	018	S11W78	0	0	0		13	S11W78	Q	SOLQUIET
						N27W67	0	0	0			N27W67	Q	MAGQUIET
						N11W66	0	0	0			N11W66	Q	
						N07W36	0	0	0			N07W36	Q	
						N07W09	1	0	0			N07W09	Q	
						S06E06	0	0	0			S06E06	Q	
						N19E14	0	0	0			N19E14	Q	
						N13E18	4	0	0			N13E18	E	
						S09E18	0	0	0			S09E18	Q	
						S10E42	1	0	0			S10E42	Q	
						S13E52	0	0	0			S13E52	Q	
258	14	13	148	170	020	N26W80	0	0	0		14	N26W80	Q	SOLQUIET
						N12W80	1	0	0			N12W80	Q	MAGQUIET
						N08W23	1	0	0			N08W23	E	
						N13W08	0	0	0			N13W08	Q	
						S09E04	0	0	0			S09E04	Q	
						N14E05	2	0	0			N14E05	E	
						S10E32	0	0	0			S10E32	Q	
						S12E40	5	0	0			S12E40	E	
259	15	14	130	161	007	N08W36	1	0	0		15	N08W36	Q	SOLQUIET
						S14W22	0	0	0			S14W22	Q	MAGQUIET

ALERT PERIODS

INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE
SEPTEMBER 1980

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location Lat-Long	No. of Flares Total	M	X		Date	Location Lat-Long	Desc*	
						N14W11	4	0	0			N14W11	E	
						S09W10	0	0	0			S09W10	Q	
						S10E17	0	0	0			S10E17	Q	
						S12E28	1	0	0			S12E28	Q	
						N20E30	0	0	0			N20E30	Q	
260	16	15	125	152	009	N09W47	2	0	0		16	N09W47	Q	SOLQUIET
						N13W33	0	0	0			N13W33	Q	MAGQUIET
						N15W22	1	0	0			N15W22	E	
						S08W22	0	0	0			S08W22	Q	
						S10E07	4	0	0			S10E07	E	
						N22E13	0	0	0			N22E13	Q	
						S12E15	0	0	0			S12E15	Q	
						N16E50	0	0	0			N16E50	Q	
						S32E68	0	0	0			S32E68	Q	
261	17	16	149	158	007	N14W45	0	0	0		17	N14W45	Q	SOLQUIET
						S08W38	0	0	0			S08W38	Q	MAGQUIET
						N15W36	4	0	0			N15W36	E	
						N39W26	1	0	0			N39W26	Q	
						S11W07	4	0	0			S11W07	E	
						N16W04	0	0	0			N16W04	Q	
						S13E02	2	0	0			S13E02	E	
						N22E09	0	0	0			N22E09	Q	
						N16E37	0	0	0			N16E37	Q	
						S31E55	0	0	0			S31E55	Q	
262	18	17	147	157	012	S08W54	1	0	0		18	S08W54	Q	SOLQUIET
						N15W49	1	0	0			N15W49	Q	MAGQUIET
						N39W43	0	0	0			N39W43	Q	
						S12W21	3	0	0			S12W21	E	
						N15W19	0	0	0			N15W19	Q	
						S12W11	4	0	0			S12W11	E	
						N18E03	0	0	0			N18E03	Q	
						S10E24	0	0	0			S10E24	Q	
						S31E45	1	0	0			S31E45	Q	
						N19E55	0	0	0			N19E55	Q	
263	19	18	197	153	008	S08W66	3	0	0		19	S08W66	Q	SOLQUIET
						N15W63	4	0	0			N15W63	E	MAGQUIET
						N38W57	0	0	0			N38W57	Q	
						N22W37	0	0	0			N22W37	Q	
						S11W34	3	0	0			S11W34	E	
						S12W23	5	0	0			S12W23	E	
						N20W18	0	0	0			N20W18	Q	
						N17W01	0	0	0			N17W01	Q	
						S11E10	2	0	0			S11E10	Q	
						S32E33	1	0	0			S32E33	Q	
						N19E41	0	0	0			N19E41	Q	
						N10E45	0	0	0			N10E45	Q	
264	20	19	207	161	007	S08W79	1	0	0		20	S08W79	Q	SOLQUIET
						N15W77	3	0	0			N15W77	E	MAGQUIET
						N20W50	0	0	0			N20W50	Q	
						S11W47	1	0	0			S11W47	E	
						S12W36	3	0	0			S12W36	E	
						N19W32	0	0	0			N19W32	Q	
						N20W15	0	0	0			N20W15	Q	
						S11W04	2	0	0			S11W04	Q	
						S32E22	1	0	0			S32W22	Q	
						N18E29	0	0	0			N18E29	E	
						N11E31	0	0	0			N11E31	Q	
						S17E72	0	0	0			S17E72	Q	
						S27E73	0	0	0			S27E73	Q	
265	21	20	214	166	010	S08W92	0	0	0		21	S08W92	Q	SOLQUIET
						N15W91	0	0	0			N15W91	E	MAGQUIET
						S12W62	0	0	0			S12W62	E	
						S12W49	2	0	0			S12W49	E	
						N20W29	0	0	0			N20W29	Q	
						S11W20	0	0	0			S11W20	Q	
						S32E11	2	0	0			S32E11	E	
						N10E12	3	0	0			N10E12	E	
						N18E15	1	0	0			N18E15	E	
						N10E17	0	0	0			N10E17	E	
						S17E61	0	0	0			S16E61	Q	
						S28E61	0	0	0			S28E61	Q	
						S07E70	0	0	0			S07E70	Q	
266	22	21	203	158	002	S12W74	1	0	0		22	S12W74	Q	SOLQUIET
						S12W62	1	0	0			S12W62	Q	MAGQUIET
						N19W43	0	0	0			N19W43	Q	
						S10W35	0	0	0			S10W35	Q	
						N08W03	0	0	0			N08W03	Q	
						S32E01	1	0	0			S32E01	E	
						N18E02	1	0	0			N18E02	E	
						N11E03	3	0	0			N11E03	E	
						N09E42	0	0	0			N09E42	Q	
						S16E46	0	0	0			S16E46	Q	
						S28E47	0	0	0			S28E47	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SEPTEMBER 1980

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	Active Regions: No. of Flares: Total	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
						S06E57	0	0	0			S07E57	Q	
267	23	22	224	177	014	S11W86	0	0	0		23	S11W86	Q	SOLQUIET
						S12W77	0	0	0			S12W77	Q	MAGQUIET
						S11W50	0	0	0			S11W50	Q	
						N05W14	1	0	0			N05W14	E	
						N11W12	2	1	0			N11W12	E	
						N18W12	1	0	0			N18W12	E	
						S32W12	1	0	0			S32W12	E	
						N09E28	0	0	0			N09E28	Q	
						S15E33	0	0	0			S15E33	Q	
						S28E35	0	0	0			S28E35	Q	
						S06E44	0	0	0			S06E44	Q	
						N19E61	0	0	0			N19E61	Q	
268	24	23	280	194	004	S11W62	0	0	0		24	S11W62	Q	SOLALERT 25/27
						N05W28	1	0	0			N05W28	E	MAGQUIET
						N11W26	1	0	0			N11W26	E	
						N18W26	4	1	0			N18W26	E	
						S32W25	3	0	0			S32W25	E	
						N08E14	0	0	0			N08E14	Q	
						S15E19	0	0	0			S15E19	Q	
						S28E22	0	0	0			S28E22	Q	
						S05E33	0	0	0			S05E33	Q	
						N18E47	0	0	0			N18E47	Q	
						S32E56	0	0	0			S32E56	Q	
						S07E71	0	0	0			S07E71	Q	
						N12E75	0	0	0			N12E75	Q	
						S18E83	0	0	0			S18E83	E	
269	25	24	211	190	005	N05W41	3	0	0	Presto Toyokawa 24/0715Z Tenflare 120 Flux Units 24/0727Z Duration 9 minutes.	25	N05W41	E	SOLNIL
						N11W41	1	0	0			N11W41	E	MAGQUIET
						N18W40	9	1	0			N18W40	E	
						S32W38	0	0	0			S32W38	E	
						N08E01	0	0	0			N08E01	Q	
						S15E06	0	0	0			S15E06	Q	
						S28E11	0	0	0			S28E11	Q	
						S05E18	0	0	0			S05E18	Q	
						N18E34	0	0	0			N18E34	Q	
						S31E43	0	0	0			S31E43	Q	
						S06E57	0	0	0			S06E57	Q	
						N12E61	0	0	0			N12E61	Q	
						S18E65	10	0	0			S18E65	E	
270	26	25	219	183	008	N05W54	0	0	0		26	N05W54	E	SOLALERT 26/27
						N11W54	1	0	0			N11W54	E	MAGQUIET
						N18W51	1	0	0			N18W51	E	
						S32W49	2	0	0			S32W49	E	
						N08W11	0	0	0			N08W11	Q	
						S15W07	1	0	0			S15W07	Q	
						S28W03	0	0	0			S28W03	Q	
						S06E04	0	0	0			S06E04	Q	
						N18E17	1	0	0			N18E17	Q	
						S32E31	2	0	0			S32E31	E	
						N12E49	1	0	0			N12E49	Q	
						S07E46	2	0	0			S07E46	Q	
						S18E52	1	0	0			S18E52	E	
271	27	26	233	183	008	N04W67	1	0	0		27	N04W67	E	SOLNIL
						N12W67	0	0	0			N12W67	Q	MAGQUIET
						N18W64	2	0	0			N18W64	E	
						S33W60	1	0	0			S33W60	E	
						N07W25	0	0	0			N07W25	Q	
						S14W22	0	0	0			S14W22	Q	
						S28W16	0	0	0			S28W16	Q	
						N17E03	0	0	0			N17E03	Q	
						S31E18	0	0	0			S31E18	Q	
						S09E19	0	0	0			S09E19	Q	
						S06E31	3	0	0			S06E31	Q	
						N12E35	2	0	0			N12E35	Q	
						S17E38	6	0	0			S17E38	E	
						N19E71	0	0	0			N19E71	Q	
						N20E73	1	0	0			N20E73	Q	
272	28	27	281	188	006	N05W83	0	0	0		28	N05W83	Q	SOLQUIET
						N18W78	2	0	0			N18W78	E	MAGQUIET
						S33W71	1	0	0			S33W71	Q	
						N07W40	0	0	0			N07W40	Q	
						S13W35	1	0	0			S13W35	Q	
						S28W28	0	0	0			S28W28	Q	
						N09W23	0	0	0			N09W23	Q	
						N18W19	0	0	0			N18W19	Q	
						N17W10	0	0	0			N17W10	Q	
						S31E06	0	0	0			S31E06	Q	
						S05E16	0	0	0			S05E16	Q	
						N12E22	0	0	0			N12E22	Q	
						S17E26	8	0	0			S17E26	E	
						S18E35	1	0	0			S18E35	Q	
						N29E58	0	0	0			N29E58	Q	
						N21E64	0	0	0			N21E64	Q	

SUMMARY

Message serial number
273
274
275

A=Activ

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

SEPTEMBER 1980

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	No. of Flares: Total	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
						N15E76	3	0	0			N15E76	E	
273	29	28	292	185	008	N18W90	1	0	0		29	N18W90	E	SOLQUIET
						S32W84	0	0	0			S32W84	Q	MAGQUIET
						N08W51	0	0	0			N08W51	Q	
						S27W40	0	0	0			S27W40	Q	
						N08W35	0	0	0			N08W35	Q	
						N16W21	2	0	0			N16W21	E	
						S30W08	0	0	0			S30W08	E	
						S05E04	0	0	0			S05E04	Q	
						N08E07	0	0	0			N08E07	E	
						N11E08	0	0	0			N11E08	Q	
						N16E10	0	0	0			N16E10	Q	
						S18E13	2	0	0			S18E13	E	
						S18E23	0	0	0			S18E23	E	
						N30E46	0	0	0			N30E46	Q	
						N22E50	0	0	0			N22E50	Q	
						N14E62	3	0	0			N14E62	E	
274	30	29	240	180	008	S27W53	0	0	0		30	S27W53	Q	SOLQUIET
						N08W49	0	0	0			N08W49	Q	MAGQUIET
						N18W34	1	0	0			N18W34	Q	
						S30W22	2	0	0			S30W22	E	
						S04W09	0	0	0			S04W09	Q	
						N07W07	0	0	0			N07W07	Q	
						N11W06	0	0	0			N11W06	Q	
						N16W02	0	0	0			N16W02	Q	
						S18W00	2	0	0			S18W00	E	
						S17E08	0	0	0			S17E08	Q	
						N30E34	0	0	0			N30E34	Q	
						N21E39	0	0	0			N21E39	Q	
						N15E49	1	0	0			N15E49	E	
						N15E79	0	0	0			N15E79	Q	
275	01	30	195	174	008	S27W65	0	0	0		01	S27W65	Q	SOLQUIET
						N09W73	0	0	0			N09W73	Q	MAGQUIET
						N16W50	2	0	0			N16W50	Q	
						S30W37	0	0	0			S30W37	Q	
						N07W20	0	0	0			N07W20	Q	
						N11W18	1	0	0			N11W18	Q	
						S18W13	2	0	0			S18W13	E	
						S16W04	0	0	0			S16W04	Q	
						N30E20	0	0	0			N30E20	Q	
						N21E26	2	0	0			N21E26	Q	
						N14E36	6	1	0			N14E36	A	
						N15E68	0	0	0			N15E68	Q	

A=Active C=Caution D=Doubtful E=Eruptive MF=Major Flare OG=Other Groups P=Proton Q=Quiet

RELATIVE SUNSPOT NUMBERS
ZURICH, R_Z

1979 FINAL — 1980 PROVISIONAL

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	213	224	122	153	208	181	185	121	152	101	78	208
2	187	157	156	158	187	168	145	149	124	108	63	226
3	167	155	187	148	185	151	133	140	128	97	65	232
4	156	172	218	173	182	136	123	166	141	85	65	233
5	168	166	232	190	178	130	154	192	150	96	53	188
6	168	203	206	207	215	132	185	145	131	98	72	179
7	179	240	212	218	248	120	200	147	149	97	64	136
8	190	280	262	225	230	101	199	157	156	87	90	140
9	210	279	280	262	172	103	229	168	164	78	125	108
10	178	302	260	224	140	69	214	144	168	86	130	119
11	183	295	242	245	148	67	245	142	172	87	181	125
12	189	248	261	210	135	70	257	143	166	98	174	128
13	201	183	235	181	131	71	259	150	161	105	172	133
14	213	218	230	178	146	68	203	166	136	128	193	100
15	198	186	225	146	168	52	182	157	129	161	192	83
16	185	166	215	166	163	36	154	148	134	198	196	88
17	214	238	180	160	132	67	126	173	129	211	190	93
18	224	172	151	130	122	63	127	215	146	241	185	114
19	221	174	138	118	129	119	134	218	166	213	185	137
20	214	153	126	115	139	108	173	230	179	212	179	150
21	209	124	124	121	114	105	143	233	191	217	152	118
22	191	116	111	123	99	130	122	244	196	201	139	147
23	179	142	116	124	100	149	95	246	190	184	154	158
24	161	162	130	120	122	175	112	256	193	155	122	178
25	153	155	143	107	121	176	139	229	179	151	109	168
26	145	141	116	127	152	191	171	220	166	138	101	209
27	136	115	93	128	175	205	156	223	185	117	98	231
28	142	119	98	130	197	221	149	190	188	127	124	181
29	184	98	121	122	181	191	145	170	149	118	158	166
30	190	116	139	145		182	138	150	97	108	184	149
31	223		135	174		183		138		81	194	
MEAN	186.2	183.3	176.3	162.2	159.3	126.5	166.6	179.7	157.2	135.0	135.4	154.5

1979 YEARLY MEAN = 155.4

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO
FLUX ADJUSTED TO 1 A.U., S_a

1979 — 1980

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212.8	211.6	161.9	189.1	212.6*	175.7	181.9	218.5	191.2	160.0*	131.9	213.2*
2	211.5	209.5	172.0*	199.9	217.9	172.9	181.1*	223.0	184.0	154.9	131.8	224.5*
3	204.7	207.5	195.1*	211.9*	225.7	170.2*	176.1	221.2	178.8	147.7	133.2	232.1
4	197.7*	214.2	221.0	212.4*	231.7	172.7*	184.3*	223.1*	181.5	146.7	130.9	225.1
5	192.8*	235.5	223.4*	207.7	218.9	171.8	209.7*	221.9	178.4	152.5*	132.6	215.6*
6	195.5	273.2*	223.4	222.1	221.7	169.4	238.4*	203.5	172.4	150.1	143.2*	210.9
7	197.0	286.9*	222.6	228.0	223.9*	166.3	236.1*	203.4	165.7*	152.5	142.3	213.0
8	200.3	310.1	228.9*	228.1*	218.7	164.9	241.7	200.2*	172.4*	152.8	146.4	200.9
9	209.5	314.4*	232.4	240.9*	208.2*	161.3	244.7*	193.6	174.3*	155.2	156.5	189.7
10	208.7	367.0*	230.3	253.0*	204.6*	153.9	249.0	191.1	176.1	162.3*	173.5	188.7
11	211.8	325.7*	230.6*	255.7*	213.7	147.8	249.9	191.4*	182.9	173.3	184.1	188.1
12	216.4	294.4	232.3	245.1*	213.7	138.6	245.6	189.5	189.3*	178.0	189.6	178.9
13	239.1	272.7	231.7	221.6	217.9	144.6	232.8	192.9	186.5	196.8	193.3*	171.9
14	236.4	256.4	238.3	203.8	201.0	141.2	226.3	202.9	188.8*	209.7	191.7*	163.4
15	230.7	239.7*	231.8	200.0	201.2*	139.3	206.1*	199.8	186.4	218.4	191.9	153.8
16	232.3	230.6	216.3	188.6	200.2	137.3	192.4	202.9*	193.3	235.4*	195.7	159.6
17	226.0	231.8	202.2	186.9	182.8*	142.9	191.9	207.5*	197.4	250.2*	197.7*	158.0
18	236.8	231.9	187.4	177.5	180.0*	147.4	201.4	214.3*	207.6	249.8*	204.3*	154.4
19	237.3*	214.8	183.0	164.4	177.3	162.3	214.5*	234.2	219.8*	255.2*	201.4	160.1*
20	236.7*	205.9	180.8*	156.5	174.7	162.1	215.8	244.7*	227.9*	258.0	193.0	167.5
21	230.1	189.8	176.7*	153.4	169.6	162.4	207.7	252.6	228.0	254.0	194.1	159.6
22	221.9	182.5	175.3	158.2*	167.3	162.5	199.2	276.6	250.0*	248.7	178.3*	178.6
23	214.9*	183.2	168.6	166.7	160.1	172.4*	186.2	289.5	251.5	235.1	174.1	188.7*
24	225.6*	175.2*	160.2	171.1*	157.2*	172.4	186.3	290.2	245.9*	222.2	164.3*	191.3
25	215.2	165.8*	162.0	171.3*	165.7	182.5*	185.9	292.8	238.8*	206.4	153.8*	183.8
26	202.9	161.6	159.7	178.8*	169.0	185.2	186.6	284.2	226.3	197.4	154.6	184.3
27	211.2	155.7	153.6*	190.6*	173.2	195.3*	200.6*	281.2*	212.6	188.4	159.3	183.2*
28	210.0	150.1	163.1	194.0	171.7*	203.5	203.7	280.8*	199.7*	169.5	168.3	185.2
29	214.8	154.0	174.0	197.0	176.7*	199.9	203.5*	252.3	188.8	155.3	178.5	178.2*
30	213.7*	152.2	185.5	197.9	.	194.3*	200.9	222.7	183.4	143.3	191.4*	174.1
31	214.9*	.	188.9	213.9*	.	187.2*	.	200.6	.	136.5	198.7*	.
MEAN	216.4	226.8	197.2	199.6	195.1	166.5	209.3	229.1	199.3	190.8	170.3	185.9

* adjusted for burst
A = interpolated data point

DAILY SOLAR INDICES

SEPTEMBER 1980

	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_Z	$R_{A'}$	OTTAWA 2800	AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245
1	245	20	208	205	209.4*				213.2*					
2	246	21	226	225	220.5*	518	372	242	224.5*	221	148		39	
3	247	22	232	229	228.2	530	378	242	232.1	223	142	86	39	28
4	248	23	233	230	221.3	520	376	224	225.1	220	142		42	
5	249	24	188	189	212.2*	501	359	215	215.6*	227	150		42	
6	250	25	179	169	207.6	515	346	208	210.9	209	129		39	
7	251	26	136	149	209.9	535	348	198	213.0	195	134	114	38	
8	252	27	140	144	197.9	535	348	198	200.9	195	134		38	
9	253	1	108	122	187.1	527	346	193	189.7	190	134		42	
10	254	2	119	125	186.1	528	340	195	188.7	185	129		49	
11	255	3	125	137	185.7	524		173	188.1	187	134		59	
12	256	4	128	123	176.6	515	329	188	178.9	179	127		40	
13	257	5	133	111	169.7	508	346	187	171.9	173	132		39	
14	258	6	100	83	161.3	495	341	175	163.4	162	131		42	
15	259	7	83	82	152.1	510	325	175	153.8	161	128	95	40	19
16	260	8	98	76	157.9	518	331	174	159.6	169	129	89	39	17
17	261	9	93	80	156.4	502	321	171	158.0	157	124		38	
18	262	10	114	121	153.0	499	321	166	154.4	155	113		40	
19	263	11	137	154	158.7*	518	328	182	160.1*	164	115		39	
20	264	12	150	152	166.2	515	347	186	167.5	170	123	100	38	19
21	265	13	118	144	158.3				159.6					
22	266	14	147	171	177.4	517	348	190	178.6	174	118		39	
23	267	15	158	170	187.4*	513	341	202	188.7*	188	129		46	
24	268	16	178	179	190.2	534	363	205	191.3	194	127		35	
25	269	17	168	169	182.9	528	342	195	183.8	184	133		41	
26	270	18	209	178	183.4	514	376	201	184.3	177	134		37	
27	271	19	231	178	182.5*	531	363	228	183.2*	182	137		38	
28	272	20	181	173	184.5	528	348	195	185.2	185	140		38	
29	273	21	166	151	177.7*	526	367	190	178.2*	183	134		41	
30	274	22	149	123	173.6				174.1					
MEAN			154.5	151.4	183.9	519	348	196	185.9	186	131	97	40	21

*ADJUSTED FOR BURST.

NOTE: DATA GAPS IN AFGL SAGAMORE HILL DATA ARE DUE TO EQUIPMENT PROBLEMS.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

	SUNSPOT NUMBERS						2800 MHz FLUX adjusted to 1 AU	
	Rz		Ra		Rs		Sa	
Date	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Oct 77	43.8	46	45.5	44	42.0	49	96.3	103
Nov	29.1	52	28.4	50	36.9	56	91.6	109
Dec	43.2	57	42.8	55	44.8	61	98.9	114
Jan 78	51.9	61	48.8	59	52.6	66	106.1	118
Feb	93.6	64	90.9	61	91.1	69	141.8	122
Mar	76.5	70	73.9	66	89.5	73	140.3	125
Apr	99.7	77	97.5	72	100.5	79	150.5	130
May	82.7	83	79.6	78	99.7	84	149.7	135
Jun	95.1	89	88.0	84	96.5	90	146.8	141
Jul	70.4	97	58.1	92	84.2	97	135.2	147
Aug	58.1	104	48.1	98	64.3	104	116.9	153
Sep	138.2	108	128.1	103	110.4	108	159.6	158
Oct	125.1	111	116.0	105	107.7	111	157.1	160
Nov	97.9	113	92.8	107	98.1	113	148.2	162
Dec	122.7	118	121.0	111	121.6	116	170.0	165
Jan 79	166.6	124	164.4	116	150.2	119	196.5	168
Feb	137.5	131	136.8	123	153.0	124	199.1	172
Mar	138.0	136	132.5	128	136.7	128	184.0	176
Apr	101.5	141	95.8	133	127.0	133	175.0	180
May	134.4	147	121.8	139	120.4	139	168.9	186
Jun	149.5	153	136.4	144	138.9	144	186.0	191
Jul	159.4	156*	140.5	145	123.1	145	171.4	192
Aug	142.2	157*	125.1	144	129.2	145	177.0	192
Sep	188.4	157*	184.0	143	156.5	144	202.3	191
Oct	186.2	158*	178.2	144	171.7	145	216.4	192
Nov	183.3	163*	176.5	149	182.9	149	226.8	196
Dec	176.3	165*	157.6	152	151.0	152	197.2	199
Jan 80	162.2*	165*	146.7	153	153.6	154	199.6	200
Feb	159.3*	163*	131.0	154	148.7	155	195.1	200
Mar	126.5*	162*	111.0	153	117.8	153	166.5	200
Apr	166.6*	162(±8)*	148.7	153	164.0	153	209.3	---
May	179.7*	161(±13)*	176.5	153	185.4	153	229.1	---
Jun	157.2*	158(±17)*	158.8	150	153.2	150	199.3	---
Jul	135.0*	154(±23)*	144.7	147	144.1	147	190.8	---
Aug	135.4*	151(±26)*	134.5	144	121.9	144	170.3	---
Sep	154.5*	149(±27)*	151.4	142	138.8	142	185.9	---
Oct	---	148(±29)*	---	141	---	141	---	---
Nov	---	147(±31)*	---	140	---	140	---	---
Dec	---	146(±34)*	---	139	---	139	---	---
Jan 81	---	146(±38)*	---	139	---	139	---	
Feb	---	145(±37)*	---	139	---	139	---	---
Mar	---	143(±35)*	---	136	---	136	---	---

*An asterisk denotes a value of the observed monthly mean, or the observed 12-month running mean, or the predicted 12-month average that is based only on preliminary observations of the Zurich relative sunspot number (Rz). Parentheses enclose the 90% confidence limits. Hatched boxes enclose the most recent smoothed values; boxes not shaded enclose predicted values. Ra is the new symbol for R_A'.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 21

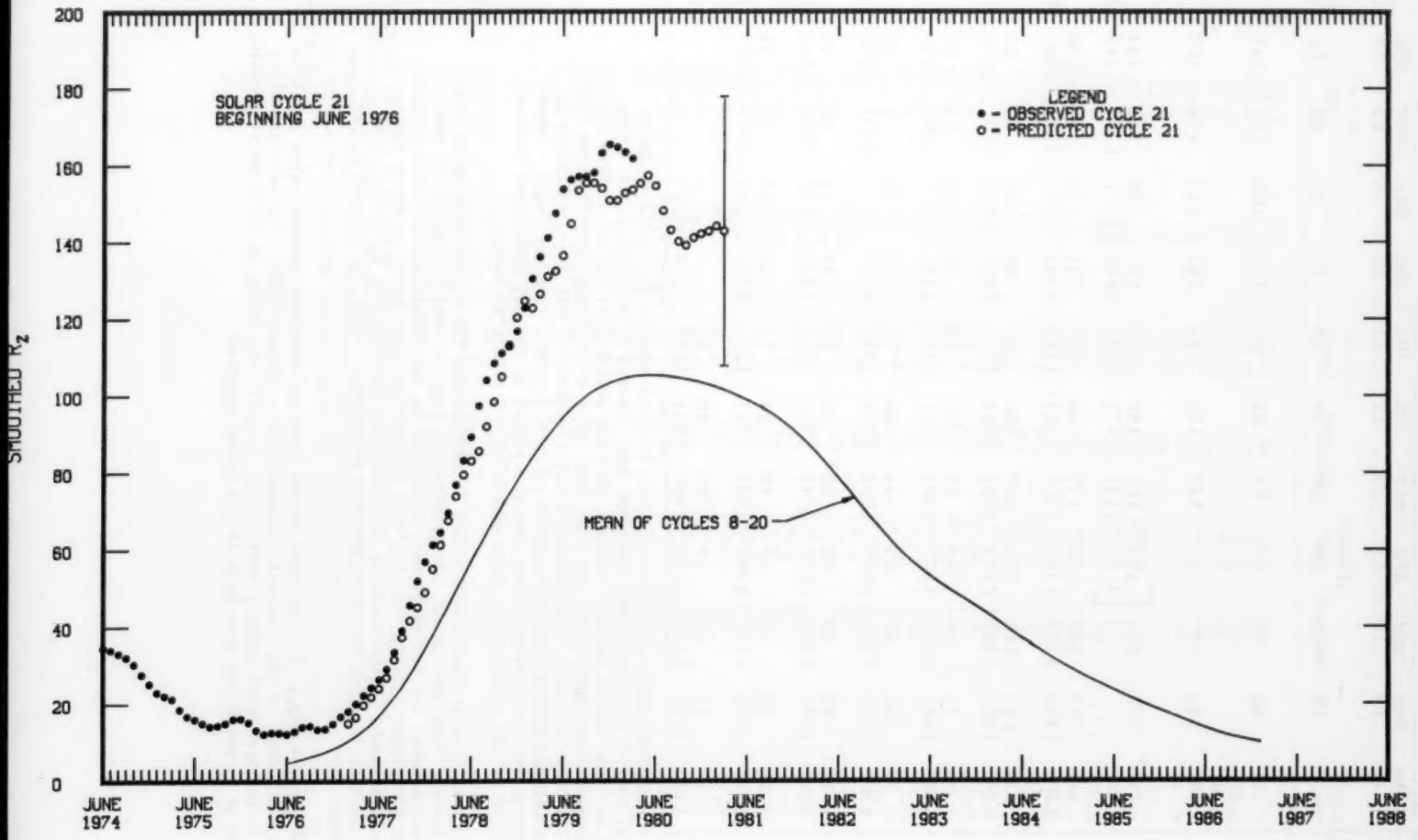
MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	156	157	157	159	163	165*
1980	165*	163	162	162	161	158	154	151	149	148	147	146
				(8)	(13)	(17)	(23)	(26)	(27)	(29)	(31)	(34)
1981	146	145	143	139	137	134	132	131	130	129	126	122
	(38)	(37)	(35)	(34)	(35)	(35)	(35)	(34)	(34)	(34)	(34)	(32)
1982	119	115	113	110	107	105	101	96	91	86	82	78
	(30)	(29)	(29)	(27)	(26)	(24)	(22)	(21)	(21)	(18)	(17)	(17)
1983	74	71	69	67	65	62	60	58	56	55	55	54
	(18)	(18)	(19)	(20)	(20)	(22)	(23)	(25)	(27)	(29)	(30)	(30)
1984	52	50	47	43	41	40	39	38	36	35	33	31
	(30)	(30)	(29)	(29)	(30)	(32)	(32)	(32)	(31)	(30)	(29)	(28)
1985	30	29	28	28	27	26	25	24	23	22	21	21
	(28)	(27)	(27)	(27)	(27)	(25)	(24)	(23)	(23)	(24)	(24)	(25)
1986	20	19	18	17	16	14	13	12	12	11	11	11
	(25)	(25)	(24)	(24)	(23)	(21)	(20)	(20)	(18)	(17)	(16)	(14)
1987	11	12	13	14	15	16	17					
	(13)	(12)	(12)	(13)	(14)	(15)	(16)					

The table gives observed Zürich *smoothed* sunspot numbers for Cycle 21 up to the one calculated from the latest observed data, marked by a vertical bar. They are based on final Zürich numbers through 1979 and provisional Zürich numbers thereafter. Some of these data after the June 1976 value will change slightly when final data for 1980 are included. The numbers after the vertical bar are predictions by the McNish-Lincoln method (see *Explanation of Data Reports*, February 1980). Shown in parentheses are the corresponding absolute values of the 90% confidence interval, an indication of the uncertainty above and below the predicted number.

The McNish-Lincoln prediction method is recommended for predictions up to only one year ahead. From that point, the predictions regress rapidly toward the mean value. Furthermore, the method is very sensitive to the identification of a minimum epoch. In SGD issues 390-401, the Cycle 21 predictions were based on March 1976 as the minimum epoch. Later studies, including one published by Waldmeier, show that June 1976 is the more appropriate epoch of minimum. Thus, we adopted a June 1976 minimum.

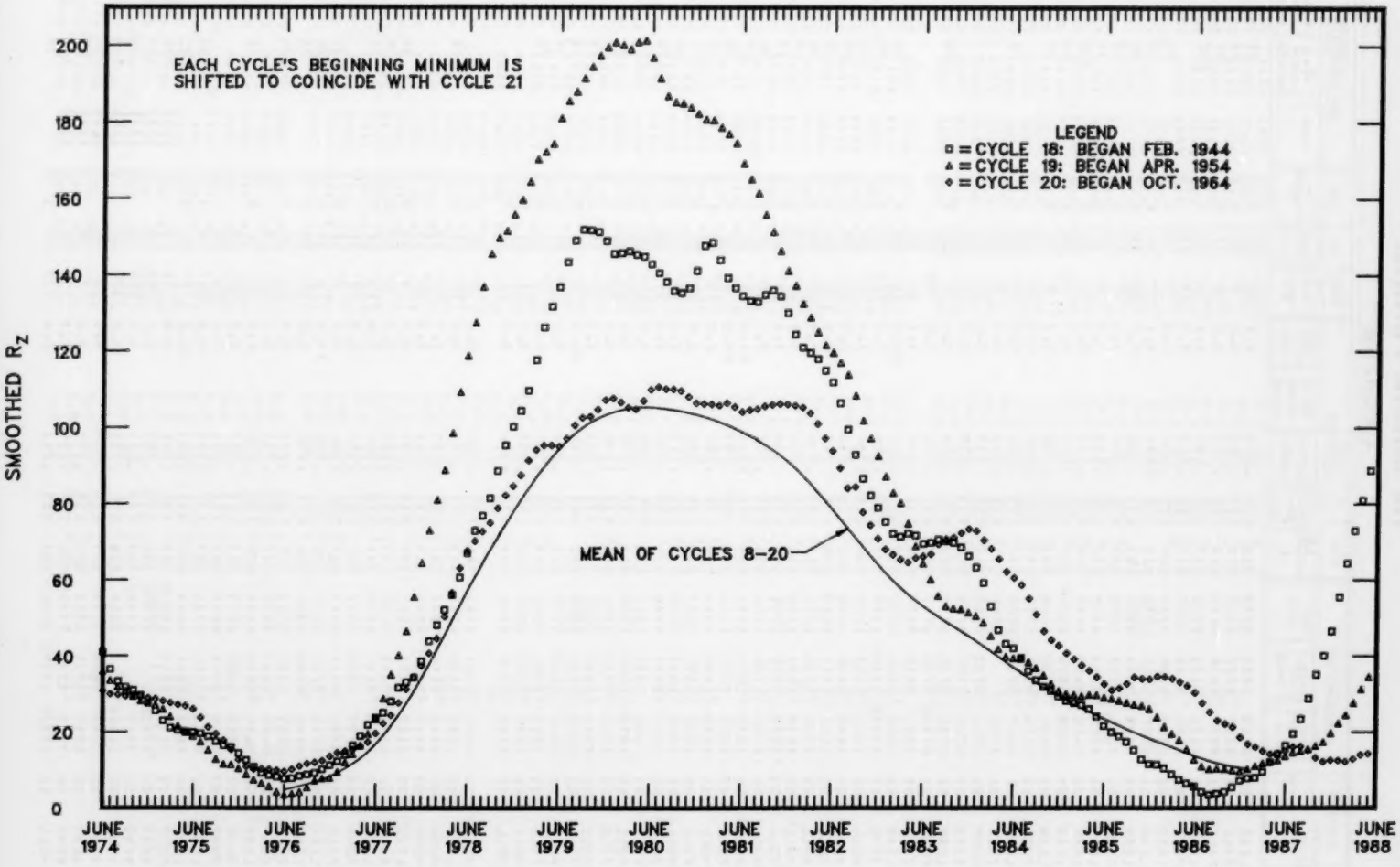
*MAXIMUM OF SUNSPOT CYCLE 21. The most recent observed smoothed sunspot value suggests the maximum occurred in the interval December 1979 - January 1980. The uncertainties, however, in the predicted numbers indicate it is still too early to claim these 2 months as the period in which the true peak in the curve occurred.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



SUPERPOSITION OF CYCLES 12, 19, AND 20

SUPERPOSITION OF CYCLES 18, 19, AND 20



Hα SOLAR FLARES

SEPTEMBER 1980

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Dist.	CORR. AREA Sq. Deg.	
LEAR	01	0013	0030	0033	N12	E28	.470		3.1	20	SF	3	C		32		
PALE	01	0022	0022	0028	N15	E27	.463		3.0	6	SF	3	C		50		
PALE	01	0033	0036	0048	N14	E26	.445		3.8	15	SF	3	C		62		
LEAR	01	0130	0131	0156	N13	E27	.457		3.1	26	SN	3	C		102		D
PURP	01	0132	0138	0202	N13	E26	.442		3.0	30	1B		C				
LEAR	01	0205	0205	0212	S07	E23	.454		2.8	7	SN	3	C		29		
LEAR	01	0227	0229	0254	S10	E26	.516		3.1	27	SN	3	C		73		
LEAR	01	0234	0237	0304	S03	E34	.580		3.7	30	SN	3	C		25		D
PALE	01	0244	0252	0259	S07	E31	.559		3.4	15	SF	3	C		49		
LEAR	01	0350	0350	0354	S07	E22	.440		2.8	4	SF	3	C		35		
LEAR	01	0416	0419	0430	S04	E33	.570		3.7	14	SN	3	C		106		
LEAR	01	0519	0524	0526D	S07	E20	.414		2.7	7D	SB	3	C		90		D
LEAR	01	0635	0635	0640	S03	E32	.552		3.7	5	SF	3	C		25		
PURP	01	0654	0704	0738	S09	E22	.458		2.9	44	SN		C				E
LEAR	01	0657	0700	0708	S07	E20	.414		2.8	11	SN	3	C		30		
ISTA	01	0700		0709	S07	E22	.440		2.9	9	SN						E
PURP	01	0701	0703	0712	N12	E18	.315		2.6	11	SB		C				D
ISTA	01	0705	0707	0709	N13	E19	.335		2.7	4	SB						D
LEAR	01	0734	0736	0737	S03	E31	.538		3.6	3	SF	3	C		26		
PURP	01	0738E	0738	0743	S02	E31	.534		3.6	5D	SN		C				E
ISTA	01	0812	0815	0823	N19	E90	.999		8.1	11	SB						AD
LEAR	01	0840	0844	0859	N17	W08	.217		31.8	19	SN	3	C		92		
ATHN	01	1301E	1302U	1318	N20	E47	.734		5.1	17D	SB	3	C		95		
HOLL	01	1347	1348	1409	S06	E16	.354		2.8	22	SN	3	C		114		
HOLL	01	1403	1409	1429	N11	E18	.312		2.9	26	SN	3	C		52		
HOLL	01	1411	1411	1619	S06	E15	.341		2.7	128	SN	3	C		34		
HOLL	01	1536	1536	1616	N11	E17	.296		2.9	40	SN	3	C		35		
HOLL	01	1618	1621	1700	N11	E17	.296		3.0	42	SN	3	C		67		
HOLL	01	1725	1725	1731	S06	E19	.392		3.2	6	SN	3	C		73		
HOLL	01	1725	1725	1744	N11	E18	.312		3.1	19	SF	3	C		31		
HOLL	01	1839	1840	1844	N09	W56	.823		28.6	5	SF	3	C		27		
PALE	01	1839	1839	1844	N09	W57	.833		28.5	5	SF	3	C		35		
HOLL	01	1855	1856	1914	S10	E15	.387		2.9	19	SN	3	C		52		
PALE	01	1855	1856	1927	S09	E14	.364		2.8	32	SF	3	C		55		
HOLL	01	1926	1930	1938	N11	E16	.280		3.0	12	SN	3	C		44		
HOLL	01	1929	1937	2006	S06	E27	.500		3.8	37	SN	3	C		174		
PALE	01	1931	1937	1943	S05	E27	.494		3.8	12	SF	3	C		157		D
HOLL	01	1939	1953	1958	N11	E17	.296		3.1	19	SN	3	C		37		
PALE	01	1940	1943	1952	N11	E17	.296		3.1	12	SF	3	C		30		C
HOLL	01	2014	2022	2026	S08	E12	.331		2.7	12	SF	3	C		43		
PALE	01	2024	2026	2029	S16	W61	.904		28.3	5	SF	3	C		18		
PALE	01	2049	2049	2107	N12	E16	.284		3.1	18	SF	3	C		24		
PALE	01	2203	2206	2211	N18	E18	.352		3.3	8	SF	3	C		24		
HOLL	01	2232	2233	2243	N16	E84	.991		8.2	11	SF	3	C				
HOLL	01	2342	2348	0000	N16	E83	.989		8.2	18	SF	3	C				
HOLL	02	0005	0007	0014	N16	E83	.989		8.2	9	SF	3	C				
LEAR	02	0103	0107	0118	N10	E13	.228		3.0	15	SF	3	C		53		
PURP	02	0110	0114	0140	S07	E09	.289		2.7	30	SN		C				E
PURP	02	0110	0121	0140	N10	E13	.228		3.0	30	SN		C				E
LEAR	02	0112	0112	0120	S07	E10	.298		2.8	8	SN	3	C		34		
PALE	02	0141	0143	0147	S05	E11	.283		2.9	6	SF	3	C		34		
LEAR	02	0142	0144	0155	S07	E10	.298		2.8	13	SF	3	C		23		
PURP	02	0202	0208	0321	S07	E12	.318		3.0	79	1N		C				E
PALE	02	0206	0211	0213	N17	E86	.995		8.5	7	SF	3	C		20		
LEAR	02	0244	0244	0247	S26	W57	.902		28.8	3	SF	3	C		26		
LEAR	02	0249	0249	0304	S06	E11	.295		2.9	15	SN	3	C		28		
PALE	02	0249	0301	0311	S05	E10	.272		2.9	22	SF	3	C		34		
PURP	02	0429	0443	0515	N10	E12	.211		3.1	46	1N		C				E
LEAR	02	0434	0434	0444	N20	E38	.629		5.0	10	SF	3	C		28		
PURP	02	0519	0520	0529	S10	E12	.367		3.2	10	SN		C				D
PURP	02	0619	0629	0635	N10	E12	.211		3.2	16	SB		C				E
LEAR	02	0641	0656	0736	S07	E07	.273		2.8	55	SB	3	C		191		D
LEAR	02	0650	0651	0659	N22	W41	.671		30.2	9	SF	3	C		21		
PURP	02	0652	0657	0657D	S06	E08	.266		2.9	50	2B		P	0657	566	58.4	
WEND	02	0700E		0739C	S06	E06	.250		2.7	39D	SB		P	0708	162	1.7	
WEND	02	1019		1031C	S07	E03	.251		2.7	12D	SN		P	1021	30	.3	
WEND	02	1144E		1216	S06	E04	.238		2.8	32D	SN		C	1151	106	1.1	
WEND	02	1200	1204	1210	S27	E73	.979		8.0	10	SN		C	1204	50		
WEND	02	1214	1215	1221	N10	E10	.178		3.3	7	SN		C	1215	62	.7	
WEND	02	1312	1320	1336D	S06	E03	.234		2.8	23D	SN		C	1320	118	1.2	
HOLL	02	1337E	1338U	1400	S07	E03	.251		2.8	23D	SF	3	C		77		

Hα SOLAR FLARES

SEPTEMBER 1980

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mil. of Disk	CORR. AREA Sq. Deg.	
HOLL	02	1349	1406	1421	N16	E76	.964		8.3	32	SF	3	C				
HOLL	02	1407	1408	1424	N27	E78	.971		8.4	17	SF	3	C		14		
HOLL	02	1423	1439	1505	S06	E02	.231		2.7	42	SN	3	C		55		
HOLL	02	1552	1557	1612	N25	E72	.944		8.1	20	SN	3	C		39		
HOLL	02	1605	1605	1611	S09	E03	.284		2.9	6	SB	3	C		57		
HOLL	02	1630	1631	1659	N11	E04	.096		3.0	29	SB	3	C		85		D
WEND	02	1633E		1714	N11	E04	.096		3.0	41D	1N		C	1647	218	2.3	
WEND	02	1653	1655	1716	N14	E75	.960		8.3	23	SF		C	1655	32		
HOLL	02	1713	1726	1737	N15	E76	.964		8.4	24	SN	3	C				
HOLL	02	1744	1747	1750	N10	E02	.060		2.9	6	SF	3	C		25		
HOLL	02	1757	1757	1804	S10	E04	.303		3.0	7	SF	3	C		24		
HOLL	02	1805	1806	1842	N11	E05	.109		3.1	37	SB	3	C		94		
PALE	02	1806	1810	1823	N11	E05	.109		3.1	17	SN	3	C		122		
HOLL	02	1812	1812	1821	S08	W01	.263		2.7	9	SN	3	C		24		
HOLL	02	1827	1830	1850	S08	W01	.263		2.7	23	SB	3	C		57		
HOLL	02	1837	1839	1902	N28	E73	.949		8.3	25	SF	3	C		17		
HOLL	02	1933	1940	1949	N15	E71	.939		8.1	16	SN	3	C		21		
HOLL	02	2155	2210	2235	S08	W03	.267		2.7	40	SF	3	C		41		
HOLL	02	2228	2231	2244	N11	W00	.066		2.9	16	SN	3	C		54		
PALE	02	2353	0001	0009	N23	E29	.530		5.2	16	SF	3	C		25		
LEAR	03	0100	0102	0104	S09	W47	.761		30.5	4	SF	3	C		18		
LEAR	03	0137	0139	0151	N11	W03	.084		2.8	14	SN	3	C		92		
PALE	03	0202E	0203U	0207	S05	W02	.214		2.9	50	SF	3	C		20		
LEAR	03	0211	0212	0223	N20	E29	.513		5.3	12	SF	3	C		23		
LEAR	03	0317	0319	0332	N16	E73	.950		8.6	15	SF	3	C		31		
LEAR	03	0351	0351	0356	N15	E72	.944		8.6	5	SF	3	C		12		
LEAR	03	0353	0414	0458	S07	W03	.251		2.9	65	1B	3	C		290		D
PURP	03	0403	0408	0444	S06	W06	.251		2.7	41	2N		C	0408	679	69.8	U
LEAR	03	0426	0429	0442	N20	E27	.487		5.2	16	SF	3	C		32		
LEAR	03	0510	0514	0515D	N11	W05	.108		2.8	5D	SB	3	C		165		D
PURP	03	0510	0527	0550	N11	W01	.068		3.1	40	1N		C				
LEAR	03	0634	0637	0645	S07	W09	.289		2.6	11	SF	3	C		45		
LEAR	03	0651	0655	0659	N11	W06	.122		2.8	8	SF	3	C		23		
LEAR	03	0713	0713	0723	N11	W06	.122		2.9	10	SN	3	C		22		
LEAR	03	0741	0743	0815	N10	W03	.071		3.1	34	SB	3	C		86		D
PURP	03	0741	0743	0755	N11	W02	.074		3.2	14	1N		C				
WEND	03	0742	0752	0809	N12	W03	.098		3.1	27	SN		C	0752	150	1.6	
LEAR	03	0845	0845	0852	S08	W08	.295		2.8	7	SF	3	C		22		
WEND	03	1207	1208	1212	N12	W07	.146		3.0	5	SF		C	1208	40	.4	
WEND	03	1209	1216	1232	S07	W11	.308		2.7	23	SN		C	1216	38	.4	
WEND	03	1255	1302	1310	S06	W10	.285		2.8	15	SF		C	1302	112	1.2	
HOLL	03	1356	1357	1414	N22	E17	.376		4.9	18	SN	3	C		66		
HOLL	03	1356	1356	1417	N10	W08	.146		3.0	21	SN	3	C		88		
HOLL	03	1356	1401	1431	N15	E60	.859		8.1	35	1N	3	C		153		
HOLL	03	1421	1430	1452	S08	W12	.331		2.7	31	SN	3	C		83		
HOLL	03	1508	1517	1528	S07	W12	.319		2.7	20	SF	3	C		61		
HOLL	03	1627	1648	1803	S07	W14	.341		2.6	96	SN	3	C		128		
HOLL	03	1825	1827	1905	S07	W12	.319		2.9	40	SN	3	C		93		
PALE	03	1827	1828	1836	S06	W11	.295		2.9	9	SF	3	C		41		D
HOLL	03	1906	1930	2030	S08	W14	.353		2.7	84	1B	3	C		231		D
PALE	03	1936E	1938U	1953	S07	W15	.353		2.7	17D	SF	3	C		141		
PALE	03	2053E	2058	2131	S08	W15	.364		2.7	38D	SN	3	C		59		
PURP	03	2300E	2300	2311	N23	E54	.810		8.0	11D	SN		C				E
LEAR	03	2337E	2339	0002	S07	W18	.389		2.6	25D	SN	3	C		112		
LEAR	03	2350	2358	0011	N21	E31	.544		6.3	21	SN	3	C		65		
HOLL	03	2359	2359	0023	N22	E25	.474		5.9	24	SN	3	C		50		
LEAR	04	0030	0032	0052	N11	W14	.247		3.0	22	SN	3	C		40		
LEAR	04	0053	0148	0228	N11	W14	.247		3.0	95	1B	3	C		288		D
PURP	04	0053	0119	0200	N12	W14	.252		3.0	67	1N		C				
LEAR	04	0053	0148	0228	N56	W09	.758		3.4	95	1B	3	C		113		D
PALE	04	0130E	0133U	0145	S07	W17	.377		2.8	15D	SF	3	C		139		
PALE	04	0130E	0146	0201	N10	W16	.277		2.9	31D	1F	3	C		196		
LEAR	04	0152	0210	0329	S07	W18	.389		2.7	97	2B	3	C		714		
PURP	04	0154	0204	0310	S07	W18	.389		2.7	76	2B		C	0200	1094	11.8	W
LEAR	04	0155	0204	0207	N21	E15	.342		5.2	12	SF	3	C		37		
PALE	04	0156E	0201U	0316D	S09	W16	.387		2.9	80D	2B	3	C		668		
PURP	04	0157	0201	0204	S10	W06	.313		3.6	7	1B		C				
LEAR	04	0158	0200	0232	S05	W05	.228		3.7	34	SN	3	C		111		
PALE	04	0201E	0201U	0213	S06	W04	.239		3.8	12D	SF	3	C		23		
PURP	04	0241	0244	0259	S25	E51	.859		7.9	18	1N		C				

Hα SOLAR FLARES

SEPTEMBER 1980

OBSERV-ATORY	OBSERVED UT				LOCATION				CMP. DAY	DURATION — MIN.	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION				COND.	TYPE	TIME — UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
LEAR	04	0242	0245	0307	S26	E51	.863		7.9	25	SN	3	C		85		
PURP	04	0247	0254	0328	N11	W13	.231		3.1	41	1N		C				E
LEAR	04	0248	0251	0312	N11	W15	.264		3.0	24	SB	3	C		67		
LEAR	04	0253	0302	0311	N14	E57	.832		6.4	18	SN	3	C		39		
LEAR	04	0408	0414	0423	N20	E14	.320		5.2	15	SF	3	C		42		
PURP	04	0418E	0418	0430	S07	W15	.353		3.1	120	SN		C				
LEAR	04	0418	0428	0441	S06	W16	.354		3.0	23	SN	3	C		48		
PURP	04	0523	0536	0553	N18	E37	.610		7.0	30	SN		P				E
BUCA	04	0640		0655	N09	W17	.291		3.0	15	SF		P	0644	172	1.8	
PURP	04	0648	0700	0736	N12	W17	.299		3.0	48	1N		P				E
BUCA	04	0700		0725	N13	W20	.350		2.8	25	SN		P	0710	129	1.4	E
LEAR	04	0851	0853	0913	N20	E35	.591		7.0	22	SF	3	C		37		
RAMY	04	1210E	1214	1226	S08	W23	.462		2.8	160	SN	3	C		52		
WEND	04	1625	1627	1632	N11	W17	.296		3.4	7	SN		V	1627	45	.5	D
PALE	04	1719E	1719U	1738	S07	W16	.365		3.5	190	SN	3	C		66		
HOLL	04	2135	2138	2201	S09	W30	.559		2.6	26	SN	3	C		129		
HOLL	04	2148	2158	2201D	N10	W29	.482		2.7	130	1N	3	C		325		
HOLL	04	2214	2220	2221D	S09	W28	.534		2.8	70	1B	3	C		287		
LEAR	04	2337E	2339	0002	S07	W18	.389		3.6	250	SN	3	C		112		
LEAR	05	0000	0001	0006	N11	W27	.453		3.0	6	SF	3	C		33		
LEAR	05	0012	0013	0016	N15	E46	.716		8.5	4	SN	3	C		26		
LEAR	05	0209	0211	0216	S07	W32	.573		2.7	7	SF	3	C		23		
LEAR	05	0225	0229	0240	N12	W22	.378		3.5	15	SB	3	C		155		D
WEND	05	0713	0715	0721	N12	W26	.439		3.4	8	SN		C	0715	50	.6	D
WEND	05	1020	1022	1032	N15	E34	.562		8.0	12	SN		C	1022	81	1.0	D
WEND	05	1214E	1216	1231C	N18	W61	.868		31.9	170	SF		C	1216	31	.7	CG
WEND	05	1246E	1250	1259D	N16	E11	.240		6.4	130	SF		C	1250	44	.5	E
WEND	05	1305	1313	1346D	N19	E17	.347		6.8	410	SN		C	1313	106	1.2	E
WEND	05	1429	1434	1448D	N19	E16	.334		6.8	190	SF		C	1434	81	.9	E
WEND	05	1431	1434	1438	N15	E31	.520		7.9	7	SF		C	1434	31	.4	D
PALE	05	1815E	1815U	1823	S04	W28	.502		3.7	80	SF	3	C		14		
PALE	05	1815E	1815U	1837D	S08	W37	.642		3.0	220	SF	3	C		89		
LEAR	06	0040	0040	0048	N15	W38	.616		3.2	8	SN	3	C		24		
LEAR	06	0144	0154U	0219	N15	W39	.629		3.1	35	1N	3	C		221		
LEAR	06	0854	0857	0931	S11	W46	.758		2.9	37	1B	3	C		230		D
MANI	06	0858E	0858U	0904D	S10	W45	.743		3.0	60	SF	1	V		50	.8	F
ATHN	06	0901E	0904	0915C	S08	W47	.758		2.9	140	SN	3	C		32		D
LEAR	06	0914	0919	0936D	N14	E27	.460		8.4	220	SF	3	C		26		
LEAR	06	2329	2329	2350	S07	W53	.817		3.0	21	SF	3	C		19		
LEAR	07	0011	0011	0026	N22	W26	.486		5.1	15	SF	3	C		41		
LEAR	07	0158	0202	0217	N21	W25	.466		5.2	19	SN	3	C		44		
LEAR	07	0319	0322	0331	N21	W25	.466		5.3	12	SB	3	C		56		
LEAR	07	0547	0547	0559	N14	E17	.309		8.5	12	SF	3	C		31		
WEND	07	0725	0734	0809	N22	W26	.486		5.4	44	1N		C	0734	181	2.3	
LEAR	07	0727	0732	0753	N24	W26	.500		5.4	26	SF	3	C		135		
LEAR	07	0930	0930	0933D	N05	E65	.903		12.3	30	SF	3	C		18		
WEND	07	0958	1002	1006	S04	W65	.912		2.5	8	SF		C	1002	31		D
RAMY	07	1244	1250	1255	N09	W61	.869		3.0	11	SF	3	C		15		
WEND	07	1617	1621	1642	N27	E07	.356		8.2	25	SF		C	1621	63	.7	
WEND	07	1644		1700	N20	W24	.447		5.9	16	SF		C	1648	31	.4	D
HOLL	07	1910	1910	1917	N15	E07	.180		8.3	7	SN	3	C		36		
HOLL	07	2004	2014	2026	S06	W66	.922		2.9	22	SF	3	C		53		
HOLL	07	2236	2242	2252	N15	E05	.159		8.3	16	SF	3	C		33		
HOLL	07	2303	2304	2320	N19	W40	.650		5.0	17	SF	3	C		25		
HOLL	08	0006	0006	0014	N28	W01	.355		7.9	8	SF	3	C		23		
LEAR	08	0336	0338	0341	N22	W41	.671		5.1	5	SF	3	C		22		
LEAR	08	0336	0340	0341	N06	E56	.825		12.4	5	SF	3	C		19		
LEAR	08	0504	0505	0523	N11	E90	1.000		15.0	19	SN	3	C				
LEAR	08	0523	0527	0643	S11	W68	.940		3.1	80	3B	3	C		862		
MANI	08	0544E	0544U	0639D	S07	W72	.957		2.8	550	2F	2	P		350	8.0	FZ
WEND	08	0647E		0820	S10	W65	.920		3.4	930	1N		C	0647	213		
WEND	08	0656	0700	0711	N27	W03	.341		8.1	15	SF		C	0700	63	.7	
ISTA	08	0725		0755	N15	E03	.144		8.5	30	1N						U
WEND	08	0725	0728	0749	N16	E02	.156		8.5	24	SF		C	0728	75	.8	E
WEND	08	1016	1023	1153C	N19	W21	.399		6.9	970	2N		C	1023	475	5.6	IU
WEND	08	1050		1105	N12	E81	.984		14.5	15	SF		C	1054	25		D
WEND	08	1113		11220	N12	E80	.981		14.5	90	SN		C	1117	28		D
RAMY	08	1216	1217	1229	N23	W08	.301		7.9	13	SF	3	C		30		

Hα SOLAR FLARES

SEPTEMBER 1980

REMARKS	OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
		DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mil. of Disk	CORR. AREA Sq. Deg.	
E	WEND	08	1235E		1253D	N18	W06	.212		8.1	18D	SF		C	1245	63	.7	
	WEND	08	1348	1354	1421D	N12	E80	.981		14.6	33D	1F		C	1354	88		
	RAMY	08	1816	1819	1829	N13	W12	.227		7.9	13	SN	3	C		38		
	HOLL	08	1910	1913	1916D	N14	E76	.965		14.5	6D	1B	3	C				
	PALE	08	1910	1913	1930	N11	E75	.961		14.4	20	1B	3	C				
	RAMY	08	1915	1915	1923	N15	E76	.964		14.5	8	SF	3	C				
E	HOLL	08	2008	2009	2020	N14	W07	.167		8.3	12	SF	3	C		21		
	HOLL	08	2032	2033	2038	N12	E68	.921		14.0	6	SN	3	C		19		
E	MANI	08	2205E	2207	2215D	N16	W12	.253		8.0	10D	SF	1	V		30	.3	
E	PALE	08	2206E	2209U	2216	N15	W12	.243		8.0	10D	SF	3	C		29		
	PALE	08	2255	2312	2320	N11	E71	.940		14.3	25	SF	3	C		22		
D	PALE	08	2300E	2300U	2307D	N24	W50	.773		5.2	7D	SF	3	C		20		
	MANI	09	0021E	0022	0030D	N16	W13	.266		8.0	9D	SN	1	V		20	.2	
	LEAR	09	0022	0023	0034	N13	W15	.273		7.9	12	SN	3	C		103		
	LEAR	09	0146	0148	0202	N14	W14	.264		8.0	16	SB	3	C		125		
	MANI	09	0147E	0147U	0156	N15	W12	.243		8.2	9D	SB	1	V		60	.6	
	LEAR	09	0350	0351	0403	N15	W11	.230		8.3	13	SF	3	C		25		
	LEAR	09	0534	0536	0541	N21	W52	.788		5.3	7	SF	3	C		37		
	LEAR	09	0617	0621	0627	N13	W18	.319		7.9	10	SN	3	C		69		
	LEAR	09	0637	0639	0648	N22	W55	.818		5.2	11	SN	3	C		42		
	LEAR	09	0647	0649	0654	N11	E71	.940		14.6	7	SF	3	C		12		
D	LEAR	09	0810	0810	0814	N22	W57	.836		5.1	4	SF	3	C		22		
D	LEAR	09	0914	0916	0936	N25	W17	.408		8.1	22	SN	3	C		69		
D	PALE	09	1839E	1841	1900D	S24	E11	.545		10.6	21D	1F	3	C		285		
C	PALE	09	1859E	1900	1931D	S08	W89	1.000		3.1	32D	SN	2	C				
G	PALE	09	1946	1950	2006	N15	E62	.876		14.5	20	SN	3	C		48		D
E	PALE	09	2106	2112	2119	N15	E61	.868		14.5	13	SF	2	C		23		
E	PURP	10	0659E	0659	0710	N14	E56	.822		14.5	11D	SB		C				E
D	PURP	10	0723E	0723	0729	N13	E55	.813		14.4	6D	SB		P				E
	LEAR	10	0726	0828	0923	N14	W82	.986		4.2	117	SN	3	C				
	PURP	10	0729	0731	0903	N16	W90	.999		3.6	94	SB		C				
	ATHN	10	0729	0732	0927	N20	W79	.975		4.4	118	SB	3	C		32		D
	LEAR	10	0826	0828	0840	N22	W69	.926		5.2	14	SF	3	C		35		
D	PALE	10	2010E	2014U	2020	N14	E47	.727		14.4	10D	SF	3	C		23		
F	LEAR	10	2236	2342	0002	S13	E79	.988		16.9	86	SN	3	C		29		
D	LEAR	11	0144	0151	0217	N10	E41	.651		14.1	33	SB	3	C		116		
	PURP	11	0149E	0149	0223	N12	E43	.677		14.3	34D	1B		P				G
	LEAR	11	0402	0404	0409	N11	E38	.611		14.0	7	SN	3	C		39		
	PURP	11	0617E	0617	0746	S13	E90	1.000		18.0	89D	1N		C				
	LEAR	11	0617	0620	0640	N16	W40	.644		8.3	23	SF	3	C		169		
	PURP	11	0618	0624	0633	N17	W40	.646		8.3	15	1N		P				G
	PURP	11	0618	0624	0633	S09	W55	.840		7.1	15	1F		P				E
	LEAR	11	0629	0632	0640	S25	W07	.544		10.7	11	SF	3	C		37		
	ISTA	11	0635E		0800	S12	W55	.848		7.1	85D	1N						B
	ISTA	11	0635E		0808	S10	E79	.986		17.2	93D	SN						B
D	LEAR	11	0643	0646	0647	N11	E38	.611		14.1	4	SF	3	C		58		
	LEAR	11	0650	0651	0701	N13	E40	.639		14.3	11	SN	3	C		66		
	ISTA	11	0735		0812	N13	E43	.678		14.5	37	1N						D
O	PURP	11	0746E	0746	0746D	S10	W56	.851		7.1		SF		C				D
	PURP	11	0801	0824	0834	N12	E38	.612		14.2	33	1B		C				E
	ISTA	11	0820		0842	N10	E38	.611		14.2	22	2B						E
	LEAR	11	0822	0824	0844	N09	E34	.555		13.9	22	SN	3	C		94		
	HOLL	11	1524	1527	1533	N13	E34	.558		14.2	9	SN	3	C		39		
	LEAR	11	2336	2342	0002	S13	E79	.988		17.9	26	SN	3	C		29		
	PURP	12	0119	0120	0131	N11	E25	.422		13.9	12	SB		C				E
	PURP	12	0124	0125	0157	N12	E25	.424		13.9	33	SN		C				E
	PURP	12	0232	0235	0304	N08	E02	.037		12.3	32	1N		C				E
	LEAR	12	0507E	0508	0540	N11	E22	.375		13.9	33D	SB	3	C		97		D
	LEAR	12	0515	0517	0524	S14	E64	.920		17.0	9	SF	3	C		14		
FZ	LEAR	12	0547E	0550	0552D	N13	E27	.457		14.3	5D	SB	3	C		155		
	PURP	12	0555E	0555	0606	N12	E23	.393		14.0	11D	1B		C				E
U	LEAR	12	0737	0738	0742	N11	E21	.359		13.9	5	SF	3	C		36		
E	LEAR	12	0748	0804	0807D	N12	E26	.439		14.3	19D	1N	3	C		202		
I	LEAR	12	0820	0829	0836	N06	E01	.028		12.4	16	SF	3	C		48		
U	WEND	12	1231E		1303	N08	W04	.070		12.2	32D	SN		C	1235	110	1.1	
D	WEND	12	1247E		1258	N11	E19	.328		14.0	11D	SF		C	1253	60	.7	
	WEND	12	1412	1414	1424	N11	E18	.312		13.9	12	SN		C	1414	20	.2	D
	WEND	12	1500	1506	1543	N12	E20	.347		14.1	43	SF		C	1506	106	1.2	E

Hα SOLAR FLARES

SEPTEMBER 1980

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
LEAR	13	0201	0204	0222	N18	W63	.884		8.4	21	SN	3	C		101		
LEAR	13	0315	0317	0323	S14	E53	.836		17.1	8	SF	3	C		22		
LEAR	13	0340	0342	0344	N11	E11	.199		14.0	4	SF	3	C		22		
LEAR	13	0340	0342	0351	S14	E54	.845		17.2	11	SF	3	C		28		
LEAR	13	0521	0524	0534	S11	E52	.818		17.1	13	SF	3	C		108		
LEAR	13	0836	0839	0847	N11	E11	.199		14.2	11	SF	3	C		25		
LEAR	13	0843	0845	0909	N06	W16	.275		12.2	26	SF	3	C		37		
RAMY	13	1309	1309	1313	S10	E47	.765		17.1	4	SF	3	C		23		
PALE	13	1855	1856	1905D	S09	E43	.717		17.0	16D	SF	3	C		77		C
PURP	14	0015	0025	0026	S09	E05	.292		14.4	11	SN		C				
PURP	14	0301	0303	0307	N15	W01	.136		14.1	6	1N		C				
LEAR	14	0551	0555	0614	N09	W26	.435		12.3	23	SN	3	C		128		
PURP	14	0552E	0552	0613	N09	W25	.420		12.4	21D	SN		P				E
LEAR	14	0653	0656	0701	S12	E38	.674		17.1	8	SF	3	C		58		
BUCA	14	0654	0656	0700	S12	E37	.663		17.1	6	SN		C	0656	107	1.5	
ISTA	14	0825E		0840	N15	W04	.151		14.1	15D	SN						D
RAMY	14	1126	1141	1152	N15	W06	.169		14.0	26	SN	3	C		81		
ATHN	14	1128	1131	1153	N15	W06	.169		14.0	25	SB	3	C		64		
RAMY	14	1429	1429	1434	N12	W08	.160		14.0	5	SF	3	C		45		
HOLL	14	2040	2041	2053	N15	W13	.258		13.9	13	SN	3	C		21		
LEAR	15	0005	0007	0010	S10	E19	.432		16.4	5	SF	3	C		40		
LEAR	15	0646	0648	0700	N06	W40	.639		12.3	14	SF	3	C		38		
LEAR	15	0729	0731	0749	S10	E14	.377		16.4	20	1B	3	C		290		
PURP	15	0730E	0730	0743	S10	E13	.367		16.3	13D	1B		C				
LEAR	15	0750	0751	0755	S08	E14	.353		16.4	5	SF	3	C		28		
LEAR	15	0845	0847	0923	N08	W42	.664		12.2	38	1B	3	C		265		D
PURP	15	0847	0848	0915	N09	W39	.624		12.4	28	1N		C				
WEND	15	0848E		0917D	N08	W41	.651		12.3	29D	SN		C	0849	81	1.1	E
WEND	15	1140		1151	N17	W22	.400		13.8	11	SN		C	1144	62	.7	E
RAMY	15	1140	1142	1151	N15	W19	.345		14.1	11	SB	3	C		136		
ATHN	15	1143E	1146U	1151	N16	W19	.351		14.1	8D	SB	3	C		111		
HOLL	15	1805E	1806U	1815	S10	E14	.377		16.8	10D	SN	3	C		90		
LEAR	16	0611	0612	0616	N15	W28	.478		14.2	5	SF	3	C		56		
WEND	16	0702E		0717D	N16	W29	.495		14.1	15D	SN		C	0708	25	.3	E
ISTA	16	0717		0725	S11	E02	.314		16.5	8	1B						D
LEAR	16	0720	0721	0725	S11	E01	.313		16.4	5	SN	3	C		39		
WEND	16	0721		0727D	S11	E01	.313		16.4	6D	SN		C	0723	19	.2	
WEND	16	0834		0845D	N16	W29	.495		14.2	11D	SN		C	0837	50	.6	
LEAR	16	0835	0838	0846	N15	W30	.506		14.1	11	SF	3	C		52		
WEND	16	1034E		1059D	S32	E71	.978		21.8	25D	SN		C	1040	19		E
WEND	16	1228E		1243D	N13	W30	.501		14.3	15D	SF		C	1236	25	.3	
HOLL	16	1454	1457	1509	S13	W01	.346		16.5	15	SF	3	C		38		
HOLL	16	1640	1641	1646	N37	W25	.609		14.8	6	SN	3	C		29		
HOLL	16	1645	1655	1659	N13	W35	.572		14.1	14	SN	3	C		30		
HOLL	16	1759	1809	1827	S13	W02	.347		16.6	28	SN	3	C		39		
HOLL	16	1850	1855	1859	N13	W36	.586		14.1	9	SF	3	C		31		
HOLL	16	1912	1912	1922	S11	W02	.314		16.7	10	SF	3	C		21		
HOLL	16	2015	2019	2032	S11	E04	.319		17.1	17	SF	3	C		52		
HOLL	16	2041	2049	2154	S13	E05	.355		17.2	73	SB	3	C		186		
HOLL	16	2203	2209	2224	S12	W05	.339		16.5	21	SN	3	C		37		
HOLL	16	2307	2308	2317	S13	W06	.359		16.5	10	SN	3	C		37		
HOLL	16	2321	2323	2354	S11	E02	.314		17.1	33	SN	3	C		38		
HOLL	16	2339	2341	2345	N05	W63	.888		12.3	6	SF	3	C		26		
HOLL	16	2350	2351	0000	N12	W35	.571		14.4	10	SN	3	C		31		
HOLL	17	0030	0032	0036	S12	E03	.332		17.2	6	SF	3	C		57		
PURP	17	0345	0350	0359	N17	E36	.594		19.9	14	1N		C				G
LEAR	17	0459	0503	0517	S12	W09	.361		16.5	18	SF	3	C		43		
LEAR	17	0506	0507	0522	S09	W39	.670		14.3	16	SF	3	C		36		
LEAR	17	0615	0620	0659	N08	W67	.916		12.2	44	SN	3	C		112		
BUCA	17	0615	0622	0650	N10	W66	.908		12.3	35	SN		C	0622	86	2.0	G
ISTA	17	0620E		0628	N11	W67	.915		12.2	8D	1B						G
PURP	17	0620	0625	0634	N09	W68	.922		12.2	14	1N		P				G
LEAR	17	0653	0710	0758	S12	W03	.332		17.1	65	SN	3	C		188		
BUCA	17	0655	0708	0800	S10	W04	.303		17.0	65	1N		C	0708	322	3.5	
LEAR	17	0701	0701	0711	S35	E63	.955		22.0	10	SF	3	C				
PURP	17	0710	0713	0728D	S11	W05	.323		16.9	18D	2N		C	0713	491	51.6	
WEND	17	1019	1019	1025D	S12	W08	.355		16.8	6D	SN		C	1019	19	.2	
RAMY	17	1329	1347	1408	S14	W15	.437		16.4	39	SF	3	C		39		

OBSERV-ATORY
HOLL
RAMY
HOLL
HOLL
PALE
HOLL
LEAR
PURP
LEAR
LEAR
LEAR
PURP
RAMY
RAMY
WEND
RAMY
RAMY
HOLL
HOLL
PALE
HOLL
HOLL
HOLL
HOLL
LEAR
LEAR
LEAR
LEAR
WEND
ATHN
LEAR
WEND
WEND
WEND
WEND
WEND
HOLL
HOLL
HOLL
WEND
WEND
HOLL
HOLL
HOLL
HOLL
HOLL
LEAR
LEAR
WEND
WEND
WEND
WEND
HOLL
HOLL
HOLL
HOLL
PALE
ISTA
ATHN
WEND
WEND
HOLL

Hα SOLAR FLARES

SEPTEMBER 1980

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALE PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mil. of Disk	CORR. AREA Sq. Deg.	
HOLL	17	1402	1406	1416	N17	E29	.499		19.8	14	SB	3	C		36		
RAMY	17	1617	1619	1636	S13	W17	.443		16.4	19	SF	3	C		41		
HOLL	17	1808	1820	1940	S11	W08	.340		17.2	100	1B	3	C		265		
HOLL	17	1817	1829	1844	N11	W47	.726		14.2	27	SF	3	C		35		
PALE	17	1834E	1843U	1920	S10	W09	.332		17.1	460	SF	3	C		170		
HOLL	17	2044	2058	2104	S15	W07	.395		17.3	20	SF	3	C		29		
LEAR	18	0119E	0133	0155	S10	W11	.348		17.2	360	SN	3	C		93		
PURP	18	0123	0137	0216	S11	W12	.370		17.2	53	1N		C				D
LEAR	18	0429	0430	0434	S14	W13	.419		17.2	5	SF	3	C		25		
LEAR	18	0429	0432	0441	S13	W25	.530		16.3	12	SF	3	C		25		
LEAR	18	0456	0458	0505	S14	W13	.419		17.2	9	SF	3	C		28		
PURP	18	0654	0702	0739	S11	W14	.389		17.2	45	SN		C				
RAMY	18	1252	1253	1300	S12	W29	.568		16.4	8	SN	3	C		60		
RAMY	18	1433	1435	1440	S08	W58	.864		14.3	7	SF	3	C		19		
WEND	18	1447E		1523D	S11	W28	.548		16.5	360	SN		C	1500	44	.5	E
RAMY	18	1453	1456	1502D	S09	W60	.882		14.1	90	SF	3	C		24		
RAMY	18	1522	1523	1556	S32	E43	.836		21.9	34	SF	3	C		42		
HOLL	18	1523	1530	1557	S32	E42	.829		21.8	34	SF	3	C		50		
WEND	18	1527		1537D	S11	W28	.548		16.5	100	SN		C	1535	63	.7	E
RAMY	18	1536	1540	1540	S12	W30	.580		16.4	4	SF	3	C		20		
RAMY	18	1547	1553	1555	S08	W59	.872		14.2	8	SF	3	C		16		
HOLL	18	1731	1733	1740	N09	W59	.852		14.3	9	SF	3	C		21		
HOLL	18	1756	1802	1846	N09	W60	.860		14.2	50	1N	3	C		145		
PALE	18	1759	1809	1823	N12	W60	.859		14.2	24	SF	3	C		59		D
HOLL	18	1946	2003	2018	S10	W18	.420		17.5	32	SF	3	C		20		
HOLL	18	2009	2009	2016	N13	W61	.868		14.3	7	SF	3	C		19		
HOLL	18	2205	2213	2238	S09	E13	.354		19.9	33	SF	3	C		41		
HOLL	18	2220	2237	2257	N13	W61	.868		14.4	37	SN	3	C		45		
HOLL	18	2243	2248	2318	S10	E12	.357		19.8	35	SF	3	C		54		
LEAR	19	0004	0004	0006	S32	E35	.782		21.6	2	SF	3	C		17		
LEAR	19	0110	0116	0120	S08	W68	.936		13.9	10	SF	3	C		12		
LEAR	19	0600	0606	0608	N15	W68	.920		14.2	8	SF	3	C		33		
LEAR	19	0819	0821	0836	N15	W67	.914		14.3	17	SN	3	C		92		
WEND	19	0819	0823	0830	N14	W66	.907		14.4	11	SN		C	0823	62		
ATHN	19	0822	0827	0854	N15	W74	.955		13.8	32	SB	3	C		48		D
LEAR	19	0833	0836	0847	S10	W30	.566		17.1	14	SF	3	C		32		
WEND	19	1007	1009	1011	N15	W68	.920		14.3	4	SN		C	1009	44		
WEND	19	1050	1107	1144	S11	W32	.597		17.1	54	1N		C	1107	194	2.4	
WEND	19	1142	1145	1150	N09	E78	.975		25.3	8	SF		C	1145	25		
WEND	19	1238	1240	1244	N15	W69	.927		14.4	6	SF		C	1240	30		
WEND	19	1320	1322	1332	N10	E34	.555		22.1	12	SF		C	1322	34	.4	
HOLL	19	1750	1759	1804	S12	W4E	.761		16.3	14	SF	3	C		21		
HOLL	19	2202	2205	2225	S11	W05	.322		19.5	23	SN	3	C		50		
HOLL	19	2245	2249	2256	S16	W37	.686		17.2	11	SN	3	C		51		
WEND	20	0813	0818	0839	S10	W12	.356		19.4	26	SN		C	0818	180	1.9	
WEND	20	0954		1025D	S38	W66	.970		15.5	310	SF		C	1003	30		
HOLL	20	2010	2010	2036	S15	W50	.812		17.1	26	SF	3	C		21		
HOLL	20	2026	2026	2049	N20	E17	.357		22.1	23	SN	3	C		41		
HOLL	20	2028	2029	2049	N08	E13	.224		21.8	21	SF	3	C		30		
HOLL	20	2110	2115	2130	N08	E12	.207		21.8	20	SF	3	C		23		
HOLL	20	2214	2227	2246	N07	E12	.206		21.8	32	SF	3	C		41		
LEAR	21	0517	0517	0522	N11	E15	.264		22.3	5	SF	3	C		27		
LEAR	21	0533	0544	0612D	S13	W53	.832		17.3	39D	SN	3	C		98		
WEND	21	0905	0912	0936	N17	E09	.229		22.1	31	SF		C	0912	112	1.2	
WEND	21	1100	1102	1108	N10	E12	.212		22.4	8	SN		C	1102	50	.5	
WEND	21	1153	1153	1157	N10	E12	.212		22.4	4	SF		C	1153	44	.5	
WEND	21	1423	1430	1434	S11	W29	.560		19.4	11	SF		C	1430	25	.3	D
HOLL	21	2108	2110	2113	S13	W74	.971		16.3	5	SF	3	C				
HOLL	21	2300	2300	2316	N10	E04	.086		22.3	16	SF	3	C		32		
HOLL	21	2304	2307	2326	N19	E02	.209		22.1	22	SF	3	C		51		
HOLL	22	0038	0039	0051	N09	E02	.048		22.2	13	SF	2	C		71		
PALE	22	0040E	0040U	0045	N10	E03	.073		22.3	5D	SF	3	C		33		
ISTA	22	0735		0748	N12	W01	.088		22.2	13	2N						U
ATHN	22	0739	0742	0752	N10	W03	.073		22.1	13	1B	3	C		222		D
WEND	22	0741E		0819D	N12	W02	.093		22.2	38D	SN		C	0741	180	1.9	K
WEND	22	0747		0819D	N16	E01	.156		22.4	32D	SF		C	0758	25	.3	D
HOLL	22	1603	1619	1702	N05	W09	.160		22.0	59	1B	3	C		232		

Hα SOLAR FLARES

SEPTEMBER 1980

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. LNGT. DIST.	CENTRAL DISTANCE	HALF PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
HOLL	22	1620	1620	1632	S33	W09	.656		22.0	12	SF	3	C		23		
PALE	22	1914	1920	1922	N19	W10	.266		22.1	8	SF	3	C		35		
LEAR	23	0133E	0135U	0142	S35	W26	.751		21.1	90	SF	3	C		56		
LEAR	23	0222	0225	0301	N18	W13	.288		22.1	39	SN	3	C		85		
LEAR	23	0439	0441	0503	N20	W14	.322		22.1	24	SB	3	C		136		D
LEAR	23	0550	0551	0602	S33	W17	.684		22.0	12	SF	3	C		80		
LEAR	23	0609	0617	0625	N19	W13	.299		22.3	16	SF	3	C		33		
LEAR	23	0635	0636	0656	S31	W16	.656		22.1	21	SF	3	C		26		
ISTA	23	0654		0706	N18	W11	.265		22.5	12	SB						U
LEAR	23	0655	0656	0701	N17	W11	.253		22.5	6	SB	3	C		84		
LEAR	23	0743	0743	0756	N09	E90	1.000		30.1	13	SF	3	C				
HOLL	23	1524E	1526U	1547	N07	W22	.372		22.0	230	SF	2	C		72		
HOLL	23	1712	1712	1724	N10	W19	.326		22.3	12	SF	3	C		60		
HOLL	23	2326	2328	2350	N05	W25	.422		22.1	24	SN	3	C		80		
LEAR	23	2336E	2337	2353	N06	W25	.420		22.1	170	SN	3	C		69		
LEAR	23	2338E	2344U	2352D	S17	E82	.995		30.1	140	1F	3	C				
LEAR	24	0033	0035	0040	S22	E87	1.000		30.5	7	SF	3	C				
LEAR	24	0352	0356	0405	S21	E87	1.000		30.7	13	SF	3	C				
LEAR	24	0424	0440	0453	N06	W28	.467		22.1	29	SF	3	C		60		
LEAR	24	0503	0509	0521	S20	E79	.991		30.1	18	SF	3	C				
LEAR	24	0609	0610	0623	S20	E80	.993		30.3	14	SF	3	C				
LEAR	24	0650	0655	0702	S20	E78	.988		30.1	12	SN	3	C				
LEAR	24	0708	0715	0730	N06	W31	.512		22.0	22	SF	3	C		45		
LEAR	24	0712	0714	0719	N19	W29	.509		22.1	7	SF	3	C		25		
LEAR	24	0715	0720	0732	S21	E78	.989		30.2	17	SN	3	C				
LEAR	24	0728	0735	0800	N18	W25	.450		22.4	32	1B	3	C		317		D
ATHN	24	0732	0735	0818	N18	W25	.450		22.4	46	1B	2	C		254		
LEAR	24	0804	0805	0824	N18	W25	.450		22.5	20	SF	3	C		29		
LEAR	24	0939	0941	0943	N09	W38	.496		22.2	4	SF	3	C		25		
RAMY	24	1510	1512	1518	N18	W34	.572		22.1	8	SF	3	C		30		
RAMY	24	1521	1529	1538	S18	E72	.967		30.0	17	SF	3	C				
HOLL	24	1525	1530	1534	S18	E71	.963		30.0	9	SF	3	C				
RAMY	24	1532	1538	1539	N17	W37	.608		21.9	7	SF	3	C		20		
HOLL	24	1631	1636	1656	S18	E64	.927		29.5	25	1N	3	C		174		
HOLL	24	1714	1717	1736	N01	W41	.660		21.6	22	SN	3	C		73		
HOLL	24	1824	1835	1850	N13	W35	.573		22.1	26	SN	3	C		64		
HOLL	24	1843	1843	1853	S17	E70	.957		30.0	10	SN	3	C				
HOLL	24	1953	1953	1958	S16	E68	.946		29.9	5	SF	3	C		11		
HOLL	24	2101	2102	2126	N16	W39	.632		22.0	25	SN	3	C		28		
HOLL	24	2145	2147	2156	N17	W33	.555		22.4	11	SN	3	C		50		
LEAR	25	0014	0015	0022	S20	E68	.951		30.1	8	SN	3	C		52		
PURP	25	0016E		0016D	S20	E68	.951		30.1		1N		V				
LEAR	25	0232	0244	0302	N12	W39	.626		22.2	30	SF	3	C		67		
PURP	25	0237E	0243	0310	N16	W43	.682		21.9	330	1F		C				G
LEAR	25	0413	0414	0427	S32	W32	.760		22.8	14	SF	3	C		32		
PURP	25	0425	0438	0457	N15	E62	.876		29.8	32	1N		C				G
LEAR	25	0433	0435	0441	S42	W56	.944		21.0	8	SF	3	C		25		
LEAR	25	0434	0434	0440	S31	E43	.829		28.4	6	SF	3	C		17		
LEAR	25	0503	0507	0515	S33	E44	.846		28.5	12	SF	3	C		26		
PURP	25	0625E	0625	0637	S07	E55	.835		29.4	120	SN		C				D
LEAR	25	0657	0657	0701	N17	W45	.708		21.9	4	SN	3	C		19		
PURP	25	0735	0739	0755	S07	E54	.826		29.4	20	SN		C				D
LEAR	25	0815	0815	0823	S08	E57	.855		29.6	8	SF	3	C		21		
PURP	25	0816		0822	S07	E54	.826		29.4	6	SN		V				D
LEAR	25	0915	0916	0932	S08	E57	.855		29.7	17	SN	3	C		46		
LEAR	25	0923	0931	0933	N10	E59	.851		29.8	10	SF	3	C		24		
LEAR	25	0933	0934	0937D	S14	W01	.358		25.3	40	SN	3	C		48		
LEAR	26	0805	0809	0812D	N16	E45	.706		29.7	70	1B	3	C		173		
PURP	26	0808E	0812	0832	N15	E48	.748		29.9	240	1B		C				
PURP	26	0902	0903	0908	S18	E49	.813		30.1	6	SN		C				
RAMY	26	1140	1148	1207	N18	W58	.843		22.1	27	SN	3	C		88		
RAMY	26	1247	1250	1253	S05	E39	.652		29.5	6	SN	3	C		39		
RAMY	26	1444	1444	1449	S07	E42	.697		29.8	5	SF	3	C		27		
RAMY	26	1512	1521	1540	S16	E43	.747		29.9	28	SF	3	C		54		
RAMY	26	1521	1522	1528	N18	E77	.968		2.4	7	SN	3	C				
RAMY	26	1603	1604	1609	N12	E42	.665		29.8	6	SF	3	C		85		
PALE	26	1747	1750	1818	S16	E43	.747		30.0	31	SN	3	C		134		

Hα SOLAR FLARES

SEPTEMBER 1980

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DAY	START	MAX. PHASE	END	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	HALF PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
MANI	27	0120	0121U	0125D	N18	W52	.786		23.2	5D	SN	1	V		12	.2	
MANI	27	0158	0200U	0203D	S14	W38	.683		24.2	5D	SF	1	V		20	.3	F
WEND	27	0706E		0736	S17	E40	.722		30.3	30D	SN		C	0706	94	1.3	FT
WEND	27	1351	1353	1400	S19	E41	.743		30.7	9	SN		C	1353	38	.5	
RAMY	27	1353E	1353U	1403	S17	E42	.742		30.7	10D	SB	3	C		81		
WEND	27	1432E		1454D	N19	W77	.968		21.8	22D	SN		C	1436	31		
RAMY	27	1433	1439	1451	N15	W73	.950		22.1	18	SF	3	C				
RAMY	27	1458	1500	1513	S19	E38	.633		29.9	15	SN	3	C		65		
WEND	27	1500		1517	S20	E27	.613		29.7	17	SN		C	1502	44	.5	E
WEND	27	1602		1614D	N14	E76	.965		3.4	12D	SN		C	1608	13		
RAMY	27	1630	1635	1648	S18	E34	.666		30.2	18	SF	3	C		23		
PALE	27	2142E	2148U	2155D	N16	E76	.965		3.6	13D	SN	3	C		3		
PALE	27	2315E	2316U	2317D	S18	E26	.584		29.9	2D	SF	3	C		8		
WEND	28	0740E		0754	S31	E01	.614		28.4	14D	SF		C	0744	50	.6	
WEND	28	1031E		1042D	N20	W07	.255		27.9	11D	SF		C	1033	13	.1	
ATHN	28	1031E	1033	1047	N17	W16	.319		27.2	16D	SB	2	C		111		
WEND	28	1130	1134	1142	N07	E12	.206		29.4	12	SN		C	1134	19	.2	
RAMY	28	1409	1420	1427	N20	W14	.324		27.5	18	SF	3	C		88		
WEND	28	1410	1420	1446	N20	W08	.263		28.0	36	SN		C	1420	163	1.8	F
RAMY	28	1627	1629	1640	N16	E61	.869		3.3	13	SB	3	C		73		D
HOLL	28	2054	2101	2115	S18	E17	.500		30.1	21	SF	3	C		51		
RAMY	29	1255	1310	1338	S32	W13	.653		28.6	43	SN	3	C		68		
WEND	29	1256	1310	1316	S30	W15	.637		28.4	20	SN		C	1310	38	.5	
HOLL	29	1331	1334	1358	N19	W25	.457		27.7	27	SF	3	C		33		
HOLL	29	1338E	1338U	1347	S31	W17	.658		28.3	9D	SF	3	C		25		
HOLL	29	1346	1357	1413	N16	E58	.843		3.9	27	SF	3	C		69		
RAMY	29	1654	1656	1712	S16	E04	.393		30.0	18	SF	3	C		96		
HOLL	29	1654	1656	1720	S16	E04	.393		30.0	26	SN	3	C		117		
PALE	29	1700E	1702U	1715	S15	E03	.375		29.9	15D	SF	3	C		15		D
PURP	29	2318	2334	0003	S16	W02	.389		29.8	45	1N		C				
HOLL	29	2330E	2332	2334D	S22	E01	.482		30.1	4D	SB	3	C		115		
PURP	29	2334	2338	2349	N07	W03	.052		29.8	15	SN		C				E
LEAR	30	0234	0235	0238	N14	E44	.692		3.4	4	SF	3	C		43		
PURP	30	0247	0300	0308	N13	W06	.149		29.7	21	SN		C				E
LEAR	30	0256	0257	0315	N13	W06	.149		29.7	19	SF	3	C		58		
LEAR	30	0342	0342	0347	N21	E33	.573		2.6	5	SF	3	C		21		
LEAR	30	0349	0349	0405	S14	W01	.355		30.1	16	SF	3	C		21		
PURP	30	0453	0455	0546	N13	E46	.715		3.7	53	1N		C				
LEAR	30	0744	0745	0754	N12	E44	.691		3.6	10	SN	3	C		48		
ATHN	30	0746E	0748U	0758	N13	E48	.739		3.9	12D	SB	3	C		80		
RAMY	30	1149	1151	1153D	N15	E41	.656		3.6	4D	SB	3	C		147		
RAMY	30	1256	1259	1302	N16	W40	.646		27.5	6	SF	3	C		26		
RAMY	30	1303	1315	1318	N16	W40	.646		27.5	15	SF	3	C		25		
HOLL	30	1417E	1417U	1446	N16	E43	.683		3.8	29D	SF	3	C		79		
HOLL	30	1800	1815	2020	N19	E43	.689		4.0	140	1B	3	C		259		
PALE	30	1804	1821	1843D	N16	E38	.620		3.6	39D	2B	2	C		449		
RAMY	30	1804	1818	1959D	N17	E38	.622		3.6	115D	2B	3	C		570		D
HOLL	30	1805E	1813U	1832D	N17	E38	.622		3.6	27D	1B	3	C		450		D
HOLL	30	1930	1932	1937	S16	W08	.408		30.2	7	SF	3	C		26		

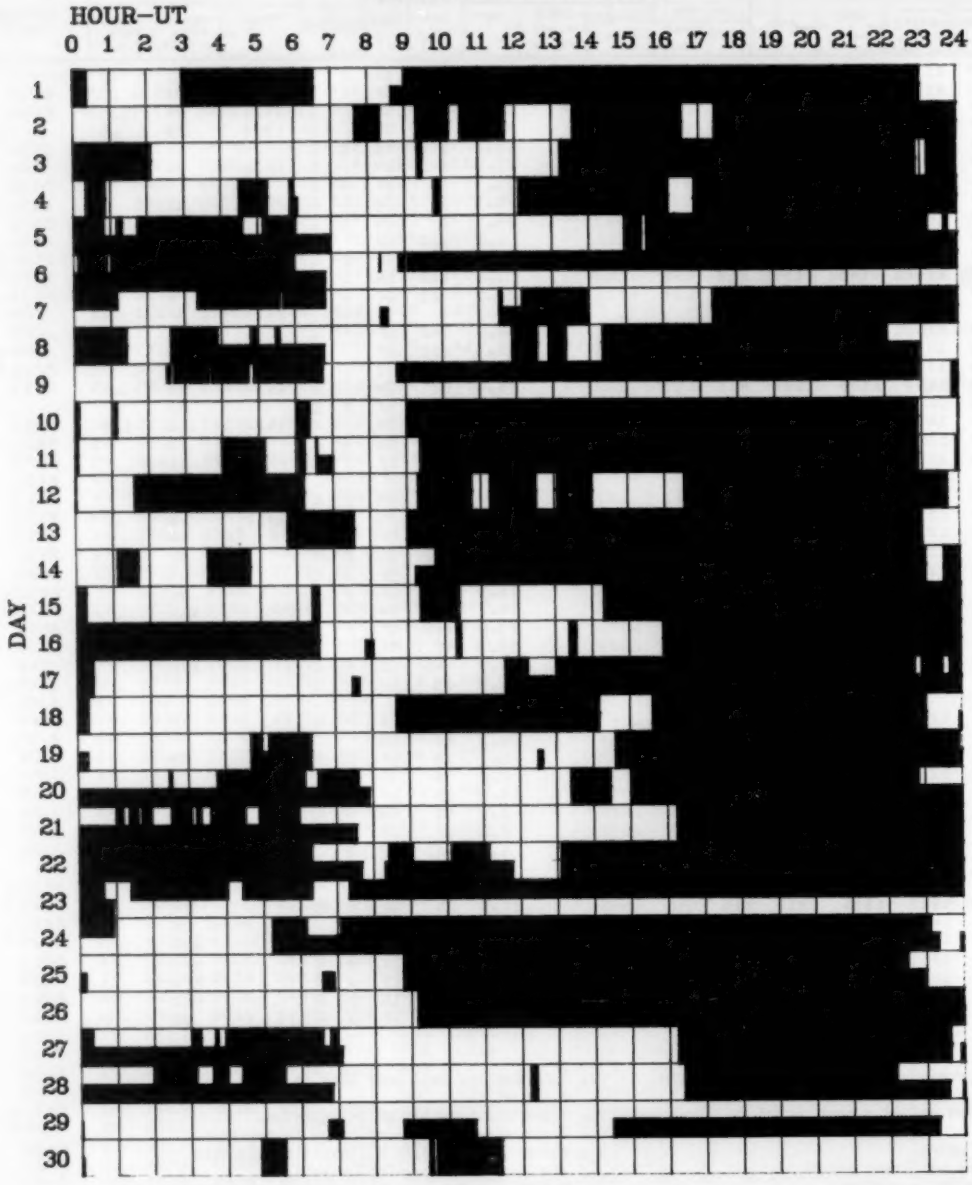
"REMARKS":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

SEPTEMBER 1980



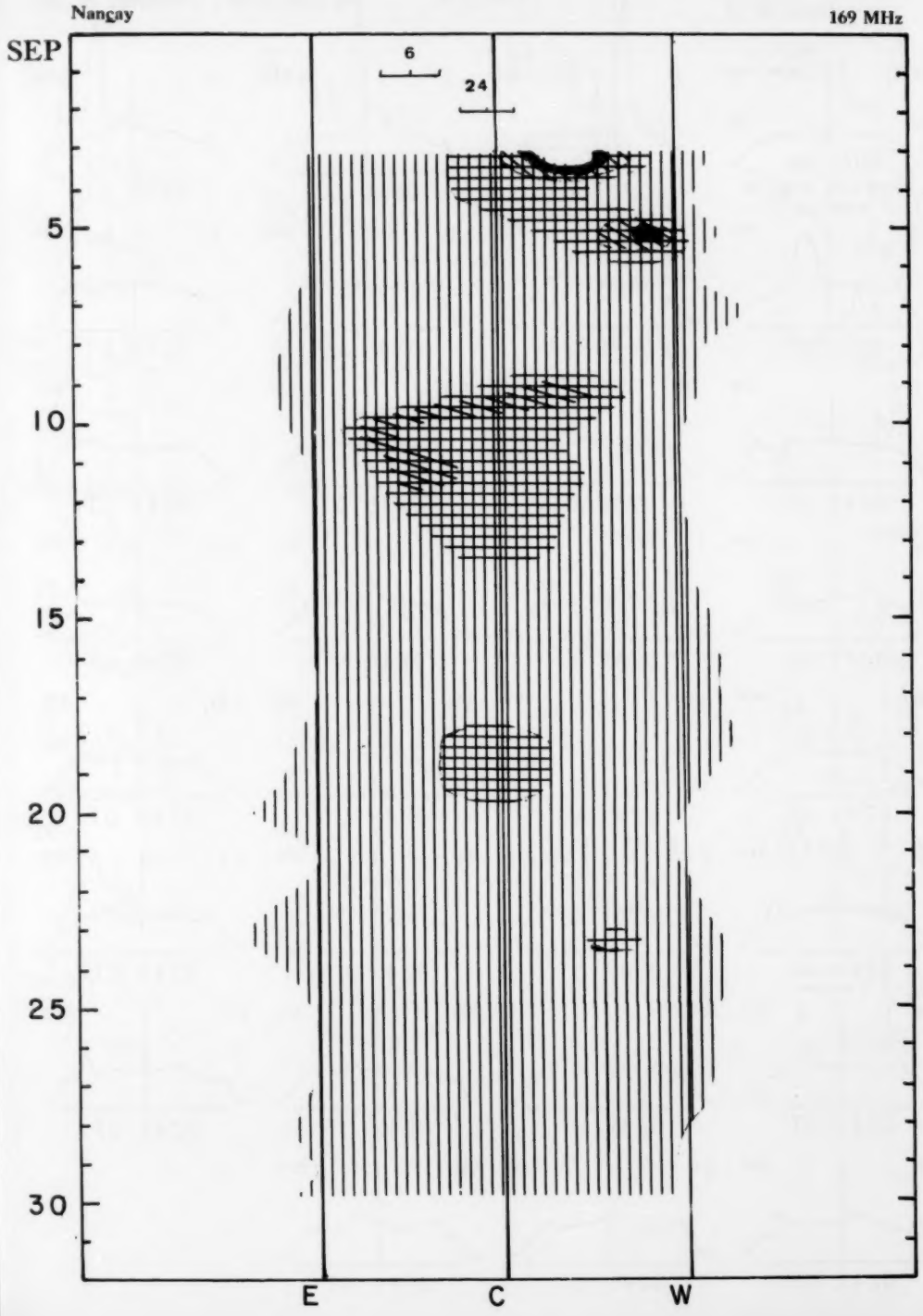
Observatories included in total patrol:

Athens	Georgiana	Istanbul	Manila	Purple Mt	Wendelstein
Bucharest	Holloman	Learmonth	Palehua	Ramey	

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

SEPTEMBER 1980



26
Sep 80

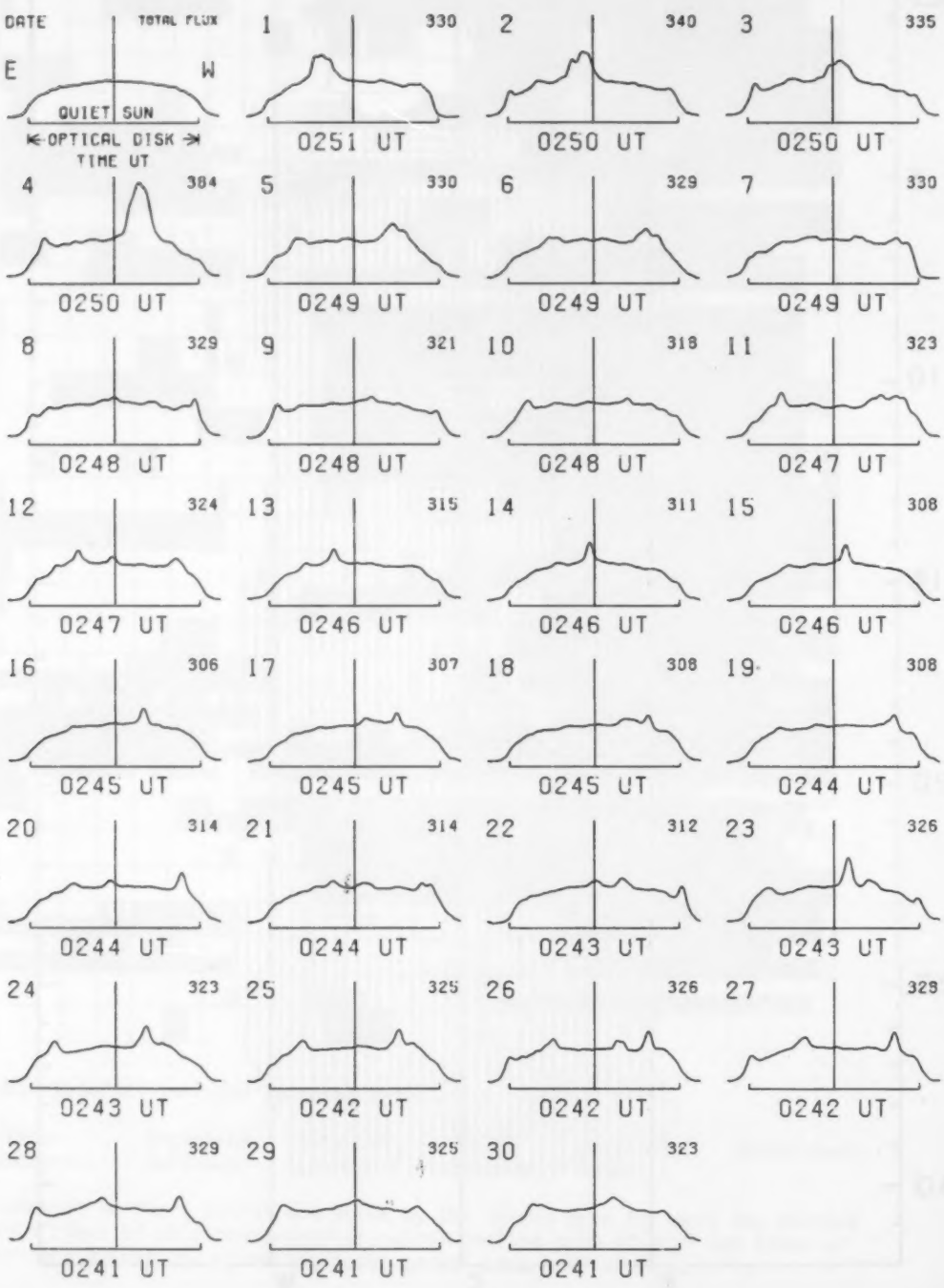
EAST-WEST SOLAR SCANS

SEPTEMBER 1980

TOYOKAWA, JAPAN

3 CM

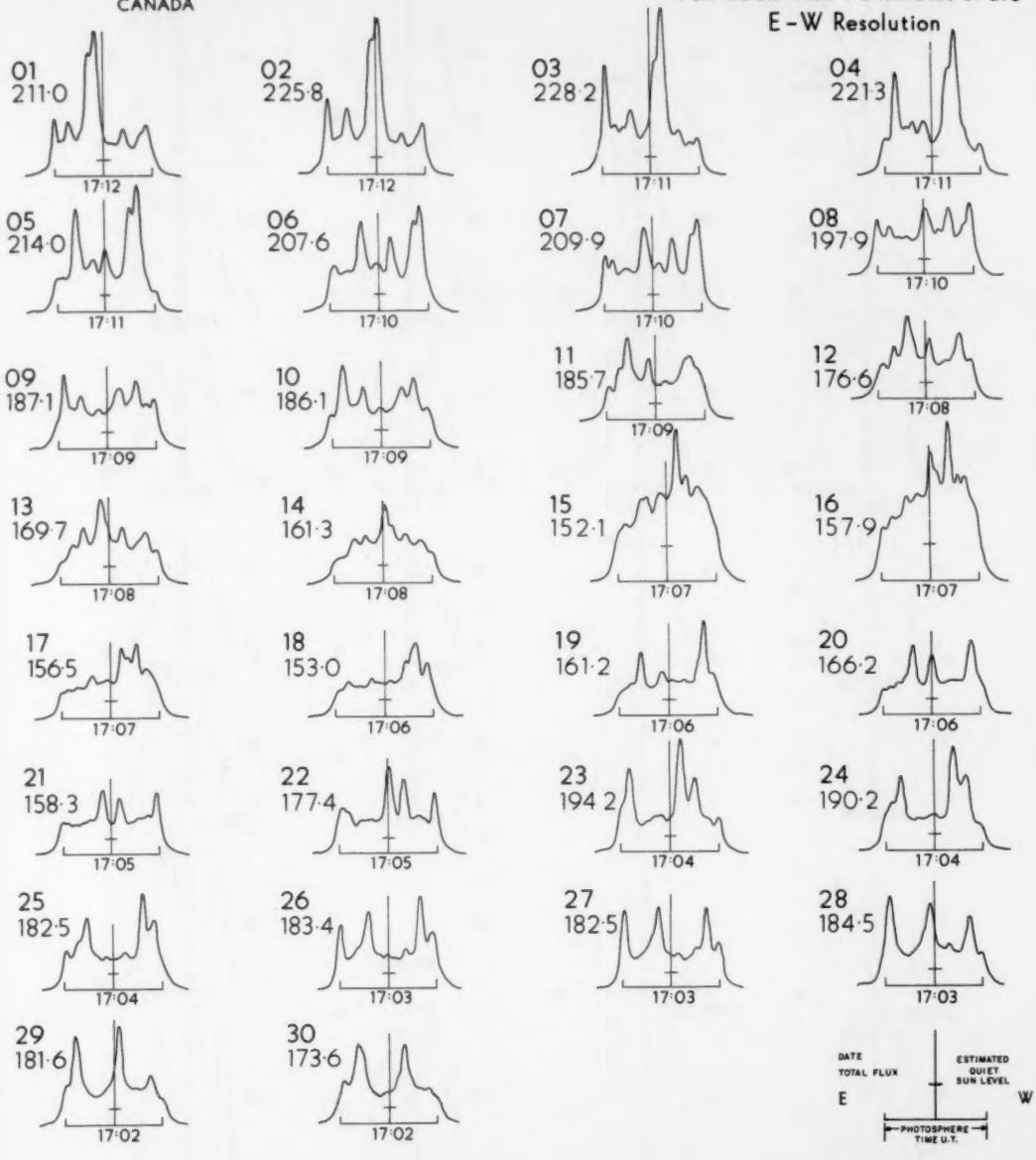
FAN BEAM WITH 1.1 MINUTES OF ARC



EAST-WEST SOLAR SCANS
SEPTEMBER 1980

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

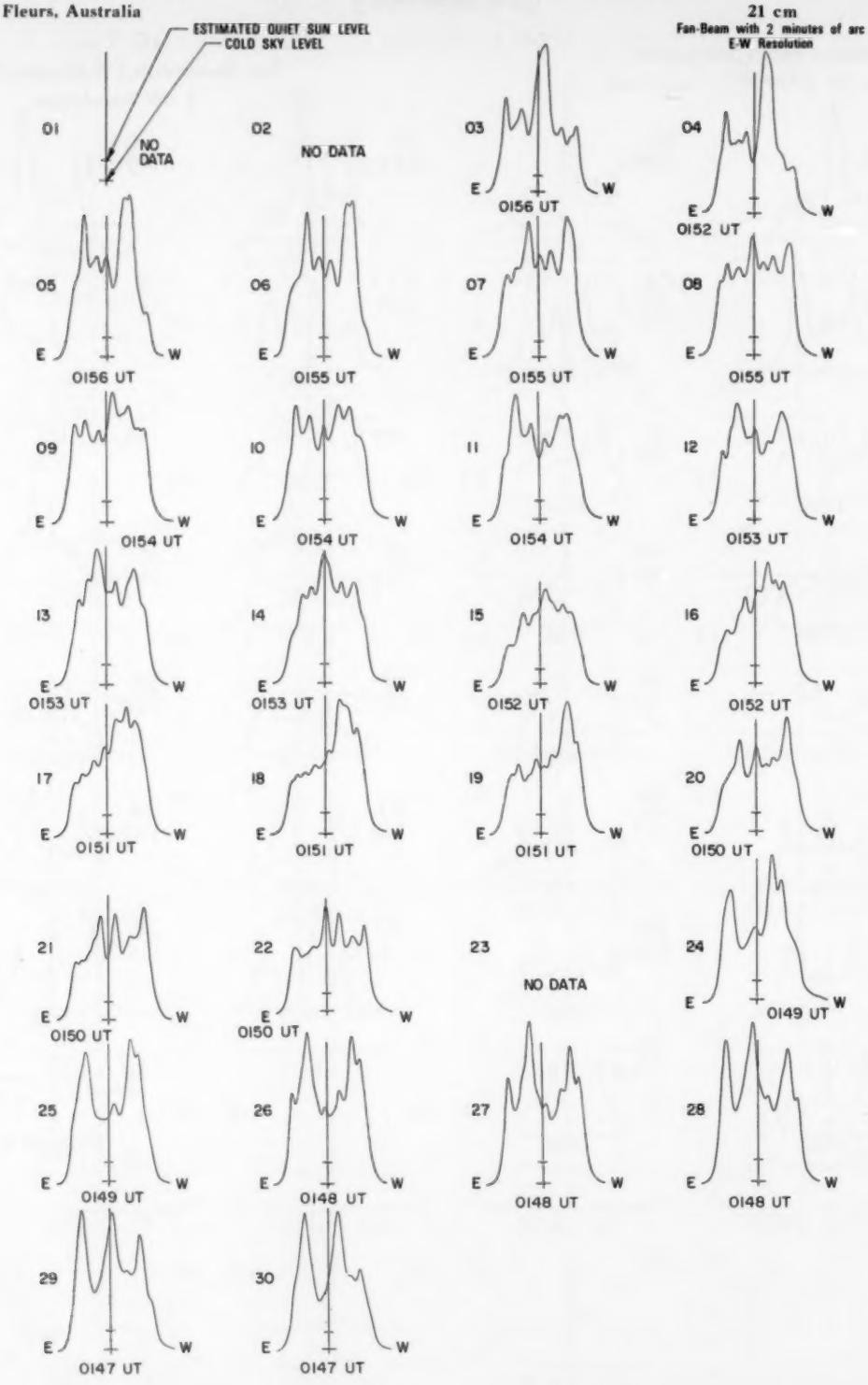


EAST-WEST SOLAR SCANS

SEPTEMBER 1980

Fleurs, Australia

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

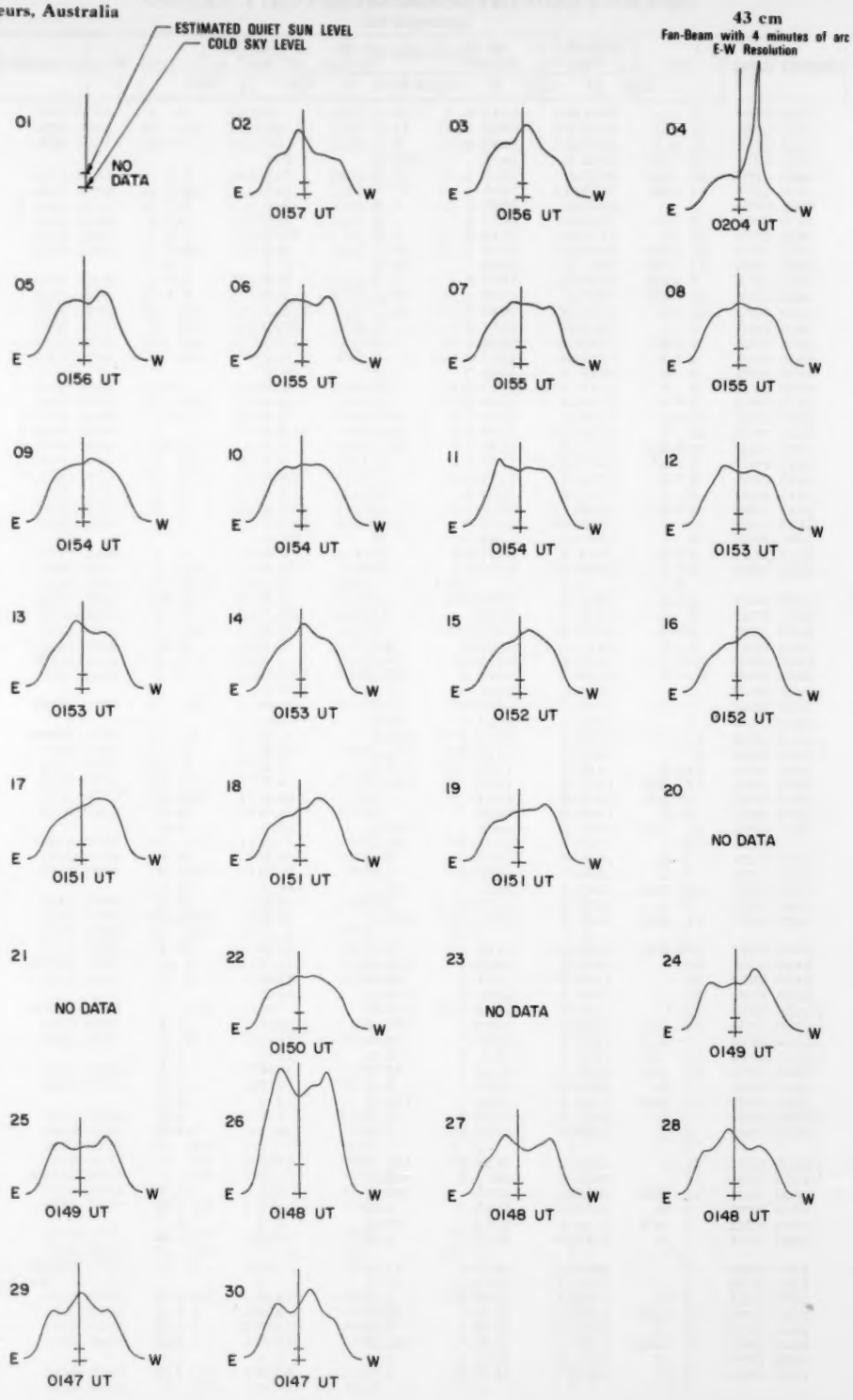


EAST-WEST SOLAR SCANS

SEPTEMBER 1980

Fleurs, Australia

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
01	3200	BERN	1	0541.5	0543.6	13.0	.0			
	3200	BERN	21	0919.0	0940.1	51.0	.0			OPR
	3200	BERN	41	1039.5	1040.0	8.0	.0			OPR
	2800	OTTA	22 GRF	1245.0	1415	160.0	8.0			
	2800	OTTA	20 GRF	1530.0	1535	49.0	2.4	1.6		
	2800	OTTA	21 GRF	1620.0	1644	95.0	4.8	2.4		
	2800	OTTA	1 S	1620.2	1621.3	1.5	4.0	2.0		
	2800	OTTA	8 S	1657.0	1657.1	.6	6.0	3.2		
	2800	OTTA	45 C	1723.4	1723.5	2.0	20.0	2.8		
	2800	OTTA	20 GRF	1815.0	1830	35.0	2.4	1.2		
	2800	OTTA	21 GRF	1852.0	1903	20.0	3.2	1.4		
	2800	OTTA	2 S/F	1854.5	1855.6	1.5	2.4	1.2		
	2800	OTTA	21 GRF	1927.0	1950	90.0	5.2	2.6		
	2800	OTTA	40 F	1928.0	1946.6	18.0	110.0			
	2695	PENT	8 S	2011.0	2011	.1	40.0			
	2800	OTTA	8 S	2025.7	2026	.3	13.0			
	2800	OTTA	8 S	2037.5	2037.5	.2	2.0			
	2800	OTTA	8 S	2042.3	2042.7	.5	24.8			
	2800	OTTA	8 S	2127.5	2127.5	.5	4.8	1.4		
	2800	OTTA	8 S	2139.0	2139.2	.4	3.0			
	2800	OTTA	24OAF	2145.0	2204	19.0	5.4	2.7		
	2800	OTTA	40 F	2150.2	2159.5	13.0	153.0			
	2695	PENT	23 GRF	2205.0	2230	55.0	3.2	1.6		
	2695	PENT	8 S	2237.0	2237	.1	4.8			
	2695	PENT	8 S	2250.2	2250.3	.2	24.0			
	2695	PENT	8 S	2251.0	2251.1	.2	12.0			
	2695	PENT	8 S	2318.4	2318.5	.1	13.4			
	2695	PENT	40 F	2329.2	2329.9	1.8	66.0			
	2695	PENT	8 S	2342.0	2342.3	.5	42.0			
	2695	PENT	8 S	2343.9	2343.9	.5	3.0			
	2695	PENT	8 S	2349.9	2350.1	.3	71.0			
02	2695	PENT	8 S	0016.2	0016.3	.1	3.6	1.8		
	2695	PENT	8 S	0022.9	0023	.4	28.0			
	2695	PENT	8 S	0037.0	0037.1	.2	3.0			
	2695	PENT	1 S	0111.0	0111.8	2.0	8.4	4.2		
	3200	BERN	21	0631.3	0641.0	78.0	.0			OPR
	8400	BERN	21	0634.0	0655.9	88.0	17.0			
	8400	BERN	1	0954.1	0955.0	2.0	22.0			
	3200	BERN	1	1004.1	1004.5	3.5	.0			OPR
	8400	BERN	3	1014.0	1017.8	27.0	72.0			
┌	3200	BERN	41	1040.0	1312.3	200.0	.0			OPR
└	8400	BERN	41	1040.0	1316.9	195.0	18.0			
	2800	OTTA	24O R	1130.0	1135	5.0	6.2			
	2800	OTTA	23 GRF	1307.0	1325	130.0	8.0	4.4		
	2800	OTTA	4 S/F	1310.0	1313	8.0	42.0	14.0		
	2800	OTTA	8 S	1603.8	1604	.5	4.2	2.0		
	2800	OTTA	23 GRF	1620.0	1645	190.0	10.8	4.0		
┌	3200	BERN	20	1629.5	1631.5	36.0	.0			OPR
└	2800	OTTA	3 S	1630.0	1631.5	5.0	12.0	4.0		
	2800	OTTA	3 S	1806.0	1806.6	3.0	12.0	4.0		
	2800	OTTA	26O FAL	1945.0	2110	95.0	-6.2	-3.1		
	2800	OTTA	1 S	2133.0	2135.3	3.0	4.6	2.2		
	2695	PENT	22 GRF	2200.0	2230	140.0	8.0	3.4		
03	2695	PENT	26O FAL	0025.0	0120	55.0	-6.8	-3.4		
	8400	BERN	20	0600.0	0635.1	190.0	19.0			OPR
	8400	BERN	20	1145.5	1215.5	80.0	12.0			
	8400	BERN	20	1340.0	1421.5	110.0	52.0			
┌	3200	BERN	20	1344.0	1353.0	105.0	.0			OPR
└	2800	OTTA	20 GRF	1345.0	1352	105.0	6.6	3.3		
┌	2800	OTTA	4 S/F	1922.0	1929	14.5	101.0	31.0		
└	2800	OTTA	29 PBI	1936.5	1936.5	53.0	11.0	5.5		
	2800	OTTA	23 GRF	2040.0	2100	80.0	6.6	3.3		
	2800	OTTA	1 S	2055.0	2057	4.0	6.6	3.3		
	2695	PENT	21 GRF	2220.0	2330	120.0	12.2	6.2		
	2695	PENT	1 S	2301.0	2302.2	5.0	6.0	3.0		
	2695	PENT	1 S	2324.0	2324.2	1.0	8.2	4.2		
04	8400	BERN	21	0626.0	0656.9	120.0U	15.0			
┌	3200	BERN	21	0626.0	0657.8	400.0	.0			OPR
	2800	OTTA	21 GRF	2010.0	2220	190.0	7.4	3.4		
	2800	OTTA	1 S	2112.0	2115	6.0	4.0	2.0		
	2800	OTTA	2 S/F	2156.0	2203	10.0	3.0	1.7		
	2800	OTTA	1 S	2215.5	2217	3.0	2.2	1.6		
05	3200	BERN	1	0806.5	0807.6	10.0	.0			OPR
	3200	BERN	1	1019.3	1020.7	11.0	.0			OPR
	2800	OTTA	1 S	1346.3	1346.7	1.0	5.8	2.9		
	2800	OTTA	21 GRF	1605.0	1635	80.0	3.8	3.0		
	2800	OTTA	1 S	1609.9	1610	1.0	3.8	2.8		
	2800	OTTA	21 GRF	1745.0	1840	195.0	14.6	7.3		
	2800	OTTA	1 S	1801.0	1801.3	1.0	2.6	1.3		
	2800	OTTA	3 S	1803.0	1803.9	2.0	11.2	3.7		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1980

DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
05	2800	OTTA	1 S	1836.7	1837	2.0	6.6	3.3		
	2800	OTTA	20 GRF	2138.0	2139	15.0	3.0	1.5		
	2695	PENT	240 P	2310.0	2330	20.0	5.6	2.8		
06	3200	BERN	3	0853.2	0855.1	15.0	.0			OPR
	2800	OTTA	21 GRF	1220.0	1305	60.0	5.2	2.4		
	3200	BERN	21	1253.7	1302.5	25.0	.0			OPR
	2800	OTTA	8 S	1302.0	1302.2	.6	7.4	3.7		
	8400	BERN	1	1317.0	1342.2	110.0	8.0			OPR
	2800	OTTA	20 GRF	1910.0	1955	220.0	5.8	2.9		
07	2695	PENT	1 S	0010.0	0011	2.0	3.8	1.8		
	3200	BERN	21	0710.0	0741.3	120.0	.0			OPR
	2800	OTTA	21 GRF	1200.0	1225	100.0	3.0	2.0		
	2800	OTTA	2 S/F	1258.8	1259.7	2.0	2.0			
	2800	OTTA	260 FAL	1730.0	1840	70.0	-8.4	-4.2		
	2800	OTTA	22 GRF	1915.0	2007	150.0	4.0	2.0		
08	8400	BERN	3	0522.5U	0524.2U	15.0U	175.0			OPR
	2800	OTTA	21 GRF	1355.0	1425	75.0	3.8	1.9		
	3200	BERN	4	1442.0	1444.0	3.0	.0			OPR
	8400	BERN	4	1443.0	1444.0	2.0	23.0			
	2800	OTTA	2 S/F	1443.0	1444	4.0	8.6	2.8		
	2800	OTTA	4 S/F	1911.0	1912.6	6.0	115.0	32.0		
	2800	OTTA	29 PBI	1917.0	1917	22.0	8.6	3.0		
	2800	OTTA	8 S	2121.9	2121.9	.2	4.0			
	2800	OTTA	3 S	2204.5	2205.1	1.0	12.8	4.4		
	2800	OTTA	8 S	2206.0	2206	.1	30.0			
09	2800	OTTA	1 S	1142.0	1142.8	1.0	8.4	2.0		
	2800	OTTA	4 S/F	1149.0	1149.7	1.0	15.2	7.6		
	2800	OTTA	20 GRF	1300.0	1420	135.0	2.4	1.6		
	2800	OTTA	20 GRF	1526.0	1530	45.0	3.4	2.4		
	2800	OTTA	8 S	1601.5	1601.6	.5	4.2			
	2800	OTTA	21 GRF	1745.0	1945	420.0	12.2	6.1		
	2800	OTTA	8 S	1851.3	1851.4	.2	7.2			
	2800	OTTA	2 S/F	1941.0	1943	2.5	4.2	2.4		
	2695	PENT	8 S	2256.5	2256.7	.7	4.6	1.5		
10	2800	OTTA	20 GRF	2158.0	2201	75.0	12.2	4.1		
11	2800	OTTA	27 RF	1225.0		240.0	3.8	3.2		
	2800	OTTA	24 R	1225.0	1305	40.0	3.8	1.9		
	2800	OTTA	24P R	1305.0		165.0	3.8			
	2800	OTTA	26 FAL	1550.0	1625	35.0	-3.8	-1.9		
	2800	OTTA	20 GRF	1715.0	1720	50.0	2.0	1.6		
	2800	OTTA	1 S	2215.0	2216	2.5	7.2	2.4		
12	2800	OTTA	23 GRF	1210.0	1249	95.0	7.4	3.6		
	2800	OTTA	1 S	1246.0	1246.1	2.0	3.0	1.5		
	2800	OTTA	20 GRF	1455.0	1503	60.0	3.8	1.9		
13	2800	OTTA	1 S	1308.2	1308.8	1.2	3.8	1.9		
	2800	OTTA	20 GRF	1356.0		150.0	3.8			
	2800	OTTA	20 GRF	1725.0	1728	20.0	2.8	1.4		
	2800	OTTA	3 S	1853.0	1853.9	2.0	10.8	5.4		
	2800	OTTA	1A S	2137.7	2138.1	3.0	3.6	1.8		
	2800	OTTA	8 S	2139.1	2139.4	.3	22.0			
14	2800	OTTA	21 GRF	1210.0		275.0	3.8	2.2		
	2800	OTTA	1 S	1435.5	1436	1.0	1.6	.8		
	2800	OTTA	1 S	2039.5	2040.2	3.0	7.8	3.0		
15	3200	BERN	4	0728.6	0729.8	7.0	.0			OPR
	2800	OTTA	1 S	1807.9	1808.2	1.0	3.6	1.8		
16	3200	BERN	2	0837.0U	0837.3U	7.0	.0			OPR
	2800	OTTA	240 R	1615.0	1655	40.0	5.8	3.2		
	2800	OTTA	20 GRF	1755.0	1805	35.0	2.0	1.0		
	2800	OTTA	21 GRF	2045.0	2057	65.0	3.4	1.7		
	2800	OTTA	2 S/F	2047.0	2048.3	4.0	7.6	3.4		
	2800	OTTA	8 S	2122.7	2122.9	.3	2.2			
	2695	PENT	20 GRF	2310.0	2325	35.0	2.2	1.1		
17	2800	OTTA	20 GRF	1325.0	1355	60.0	2.8			
	2800	OTTA	21 GRF	1755.0	1850	240.0	9.4	4.7		
	2800	OTTA	1 S	1759.0	1801	4.0	1.4	.7		
18	2800	OTTA	21 GRF	1750.0	1900	190.0	5.0	3.6		
	2800	OTTA	1 S	1803.0	1803.9	2.0	2.8	1.2		
	2695	PENT	1 S	2008.0	2009.3	5.0	1.8	.8		
	2695	PENT	240 R	2130.0	2250	8.0	3.4	1.5		
19	2800	OTTA	20 GRF	1345.0	1420	60.0	2.8	1.4		
	2800	OTTA	22 GRF	1500.0	1600	240.0	6.4	3.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

SEPTEMBER 1980

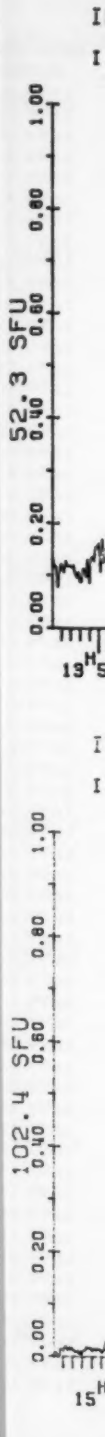
DAY OF MONTH	FREQUENCY	STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	REMARKS
				UT	UT	MINUTES	PEAK	MEAN		
19	2800	OTTA	20 GRF	1915.0	1945	100.0	3.2			
20	2800	OTTA	22 GRF	1900.0	2025	110.0	7.8	5.7		
21	2800	OTTA	20 GRF	1815.0		130.0	3.4			
22	3200	BERN	1	0855.5U	0856.0U	1.0	.0			OPR
	2800	OTTA	24O R	1435.0	1450	15.0	3.4	1.7		
	2800	OTTA	20 GRF	1615.0	1620	35.0	3.4	1.7		
	2800	OTTA	20 GRF	1715.0	1755	115.0	5.2	2.6		
	2695	PENT	24O R	2045.0	2130	45.0	3.6	1.8		
23	3200	BERN	41	0653.3U	0655.5U	3.5	.0			OPR
	2800	OTTA	1 S	1351.0	1358	7.0D	2.2			
	2800	OTTA	21 GRF	1540.0	1625	370.0	11.4	5.7		
	3200	BERN	4	1550.0	1600.5	20.0	.0			OPR
	8400	BERN	4	1553.2	1559.8	13.5	34.0D			
	2800	OTTA	4 S/F	1554.0	1601.7	15.0	133.0	63.0		
24	8400	BERN	3	0727.0	0732.7	9.0	107.0			
	2800	OTTA	27A RF	1440.0		405.0	3.0	2.8		
	2800	OTTA	24 R	1440.0	1505	25.0	3.0	1.5		
	2800	OTTA	24P R	1505.0		345.0	3.0			
	2800	OTTA	1 S	1632.0	1633.8	3.0	4.2	1.6		
	2800	OTTA	26 FAL	2050.0	2125	35.0	-3.0	-1.5		
25	2695	PENT	20 GRF	2213.0	2215	11.0	2.0	1.6		
26	3200	BERN	3	1037.5	1038.0	7.0	.0			OPR
	8400	BERN	3	1037.5	1037.9	3.0	28.0			
	2800	OTTA	27A RF	1335.0		375.0	2.0	1.9		
	2800	OTTA	24 R	1335.0	1350	15.0	2.0	1.0		
	2800	OTTA	24P R	1350.0		330.0	2.0			
	2800	OTTA	1 S	1520.0	1521.5	3.0	4.2	2.1		
	2800	OTTA	29 PBI	1523.0	1523	25.0	2.0	1.0		
	2800	OTTA	8 S	1604.5	1604.7	.5	2.6	1.3		
	2800	OTTA	4 S/F	1746.5	1748	4.0	15.2	7.6		
	2800	OTTA	29 PBI	1750.5	1750.5	15.0	5.8	1.9		
	2800	OTTA	26 FAL	1920.0	1950	30.0	-2.0	-1.0		
	2800	OTTA	20 GRF	2110.0	2117	25.0	3.8	1.9		
	2800	OTTA	26O FAL	2140.0	2147	7.0	-3.8	-1.9		
	2800	OTTA	4 S/F	2201.0	2201.8	2.5	18.2	7.0		
	2800	OTTA	1 S	2204.5	2205	1.5	3.8	1.9		
27	3200	BERN	3	0958.0	1000.6	12.0	.0			OPR
	2800	OTTA	1 S	1350.0	1350.8	1.2	3.8	1.3		
	2800	OTTA	21 GRF	1445.0	1540	90.0	2.4	1.8		
	3200	BERN	4	1459.0U	1500.2	2.0	.0			OPR
	2800	OTTA	3 S	1459.5	1500	1.0	26.8	9.0		
	2800	OTTA	20 GRF	1645.0		85.0	5.8			
	2800	OTTA	20 GRF	2035.0	2043	25.0	3.8	1.9		
	2800	OTTA	20 GRF	2146.0	2150	15.0	3.8	1.9		
28	3200	BERN	3	0955.6	0956.5	3.0	.0			OPR
	8400	BERN	3	0955.6	0956.1	2.5	6.0			
	2800	OTTA	23 GRF	1355.0	1420	135.0	3.0			
	2800	OTTA	1 S	1423.0	1423.5	2.0	2.6	1.3		
29	2800	OTTA	20 GRF	1600.0	1612	40.0	2.4	1.7		
	2800	OTTA	21 GRF	1653.0	1658	27.0	5.2	2.6		
	2800	OTTA	3 S	1655.6	1656.1	1.0	32.0	8.0		
	2800	OTTA	32 ABS	1730.0	1740	25.0	-3.2	-1.6		
30	8400	BERN	41	1148.7	1149.5	11.0	5.0			OPR
	2800	OTTA	20 GRF	1225.0		255.0	4.0			
	2800	OTTA	21 GRF	1800.0	1850	180.0	14.0	7.0		
	2800	OTTA	46F C	1810.0	1821.3	30.0	87.0	23.0		
	2800	OTTA	20 GRF	1930.0	1933	20.0	3.2	1.2		

Observatories:

BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill

Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

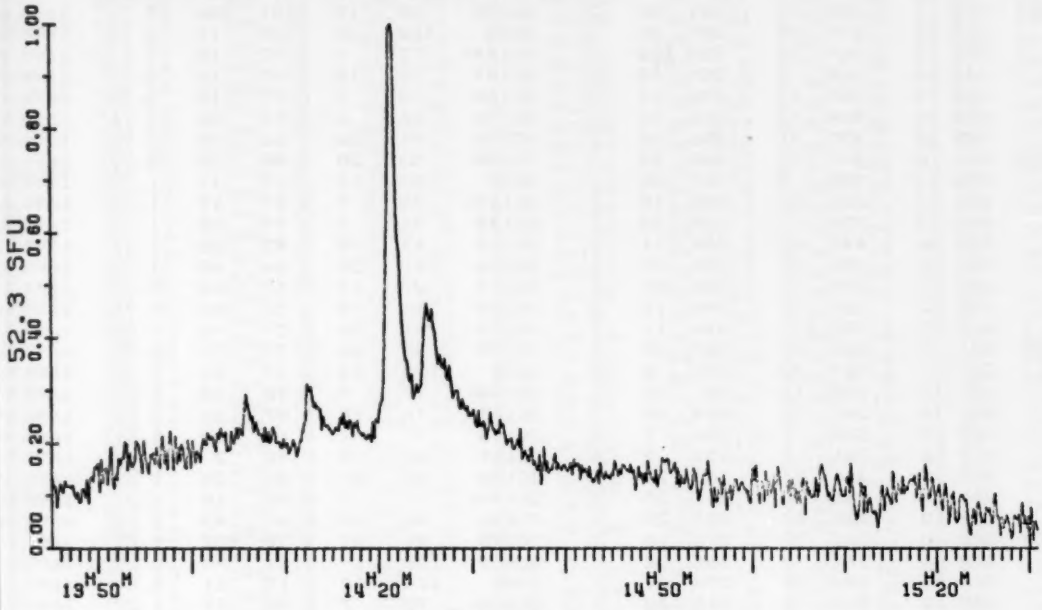


SELECTED SOLAR NOISE BURSTS

SEPTEMBER 3-23, 1980

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERNE, SWITZERLAND

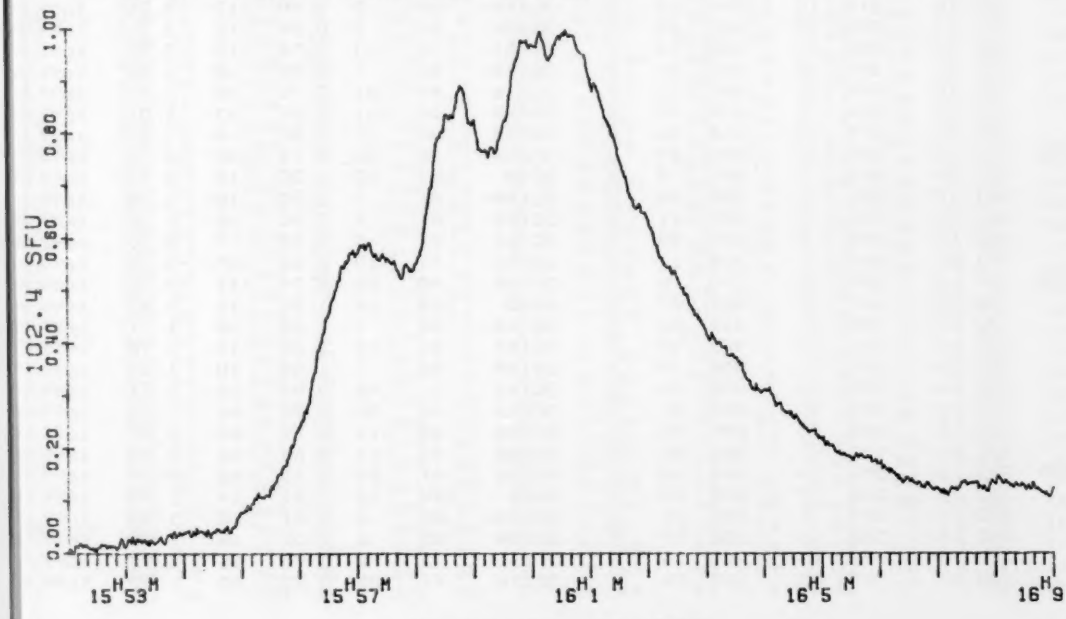
I 8.4, F=8.4 GHZ, BW=6.0 MHZ, T=10.0 SEC



UT ON SEP. 3 1980

INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERNE, SWITZERLAND

I 5.2, F=5.2 GHZ, BW=100.0 MHZ, T=1.0 SEC



UT ON SEP. 23 1980

SOLAR WIND

Interplanetary Scintillations

SEPTEMBER 1980

DATE	DOY	UT HR	VMID KM/S	ERR	VPK KM/S	ERR	RATING 1-4	SOURCE	ELONG DEG	LAT DEG	DIST AU	DLON DEG	LAG DAY	ROTATION NUMBER
800901	245	1	348	10	321	31	3	3C298	54	19	0.81	-36	-3.76	1699.04
	245	11	274	29	287	37	2	3C48	122	13	1.19	12	2.15	1698.79
	245	12	369	18	333	123	2	3C144-	75	7	0.97	18	1.17	1698.89
	245	14	318	9	304	18	2	3C147	75	15	0.97	16	0.97	1698.87
	245	15	389	17	292	16	2	3C144	75	7	0.97	18	1.20	1698.91
	245	16	368	12	316	10	3	3C161	66	-6	0.91	22	1.16	1698.90
	245	18	433	31	456	50	2	3C216	41	36	0.66	45	1.92	1698.90
800902	246	0	447	10	462	45	3	3C298	53	20	0.80	-35	-3.56	1699.12
	246	11	388	8	367	32	3	3C48	123	12	1.19	11	1.72	1698.92
	246	12	232	24	202	10	2	3C144-	76	7	0.97	19	1.15	1698.82
	246	15	305	11	314	15	3	3C144	76	7	0.97	18	1.17	1698.90
	246	16	442	62	304	11	2	3C161	67	-5	0.92	20	1.17	1698.97
	246	18	458	89	485	75	2	3C216	41	35	0.66	44	1.92	1698.95
	246	21	258	37	326	81	2	3C273	27	13	0.45	-62	-8.65	1699.23
	246	22	337	12	346	13	3	3C283	46	-8	0.72	-42	-4.76	1699.14
	246	23	382	127	316	11	2	3C295	61	36	0.87	-6	-1.08	1699.04
800903	247	0	365	22	327	24	3	3C298	52	20	0.79	-37	-3.89	1699.13
	247	11	327	32	370	8	2	3C48	123	12	1.19	11	1.89	1698.91
	247	12	332	11	338	11	3	3C144-	77	7	0.98	18	1.21	1698.94
	247	14	367	12	424	68	2	3C147	76	15	0.97	16	1.07	1698.97
	247	15	332	7	336	7	3	3C144	77	7	0.98	18	1.21	1698.95
	247	16	331	7	333	7	3	3C161	67	-5	0.92	20	1.05	1698.96
	247	17	316	57	362	28	2	3C196	53	27	0.80	34	1.39	1698.94
	247	17	341	34	347	30	2	3C144+	77	7	0.98	18	1.21	1698.96
	247	18	421	57	337	27	2	3C216	42	34	0.67	43	1.79	1698.98
800904	248	0	361	37	375	10	2	3C298	51	21	0.78	-37	-4.02	1699.17
	248	6	371	8	369	32	2	3C409	130	17	1.21	-5	0.67	1699.01
	248	11	298	28	358	31	2	3C48	124	12	1.19	11	2.01	1698.92
	248	12	310	12	325	23	3	3C144-	78	7	0.98	19	1.27	1698.97
	248	14	444	14	462	38	2	3C147	77	15	0.98	16	1.11	1699.04
	248	15	351	20	338	12	3	3C144	78	7	0.98	19	1.29	1698.99
	248	16	382	14	371	26	3	3C161	68	-4	0.93	19	1.04	1699.02
800905	249	0	349	21	348	55	2	3C298	50	21	0.77	-37	-4.12	1699.21
800906	250	10	392	14	371	17	3	3C48	126	12	1.20	10	1.69	1699.06
	250	12	319	13	349	15	3	3C144-	80	7	0.99	17	1.21	1699.04
	250	15	398	10	381	10	4	3C144	80	7	0.99	18	1.31	1699.09
	250	16	286	21	303	14	2	3C161	70	-3	0.94	18	0.92	1699.04
	250	17	327	35	310	21	2	3C144+	80	7	0.99	18	1.28	1699.06
	250	18	297	11	282	10	2	3C216	45	31	0.71	42	1.31	1699.04
	250	19	312	39	298	21	2	3C222	22	-21	0.37	63	1.01	1699.06
	250	23	279	10	264	56	2	3C295	60	37	0.87	-5	-1.29	1699.12
800907	251	0	369	15	294	29	2	3C298	48	22	0.74	-40	-4.36	1699.30
	251	10	310	9	343	8	2	3C48	127	12	1.20	10	1.95	1699.04
	251	12	376	14	329	34	2	3C144-	81	7	1.00	18	1.34	1699.11
	251	14	337	10	379	11	3	3C144	81	7	1.00	18	1.30	1699.09
	251	16	299	9	409	90	2	3C161	71	-3	0.95	17	0.90	1699.09
	251	22	264	17	318	12	2	3C283	41	-10	0.66	-45	-5.84	1699.31
800908	252	0	329	35	313	10	2	3C298	48	23	0.74	-41	-4.60	1699.32
	252	10	369	29	401	59	2	3C48	128	12	1.21	11	1.85	1699.12
	252	12	338	21	334	22	3	3C144-	82	7	1.00	18	1.31	1699.13
	252	13	350	20	323	14	2	3C147	81	15	1.00	15	1.12	1699.14
	252	14	375	11	358	15	3	3C144	82	7	1.00	18	1.33	1699.15
	252	16	378	16	332	34	2	3C161	71	-2	0.95	16	0.91	1699.17
	252	18	370	13	347	41	2	3C216	46	30	0.72	41	1.64	1699.14
	252	18	288	20	297	30	2	3C222	23	-19	0.39	63	0.81	1699.12
	252	22	315	17	383	30	3	3C283	40	-11	0.64	-46	-5.60	1699.30
800909	253	0	358	14	354	25	3	3C298	47	24	0.73	-42	-4.59	1699.37
	253	10	348	9	378	24	2	3C48	129	12	1.21	11	1.93	1699.15
	253	12	309	18	285	11	3	3C144-	83	6	1.01	18	1.40	1699.19
	253	14	333	10	332	17	4	3C144	83	6	1.01	18	1.38	1699.16
	253	15	379	10	361	10	3	3C161	72	-2	0.95	16	0.92	1699.21
	253	17	337	43	307	74	2	3C216	47	29	0.73	40	1.52	1699.18

SOLAR WIND

Interplanetary Scintillations

SEPTEMBER 1980

DATE	DOY	UT HR	VMID KM/S	ERR	VPk KM/S	ERR	RATING 1-4	SOURCE	ELONG DEG	LAT DEG	DIST AU	DLON DEG	LAG DAY	ROTATION NUMBER
	253	22	291	12	294	56	3	3C283	39	-11	0.63	-46	-5.86	1699.41
800910	254	0	359	20	301	21	2	3C298	46	24	0.72	-42	-4.65	1699.41
	254	10	322	29	418	29	2	3C48	129	12	1.21	11	2.02	1699.16
	254	14	403	16	410	65	4	3C144	84	6	1.01	18	1.37	1699.23
	254	15	338	14	334	48	2	3C161	73	-2	0.96	16	0.93	1699.22
	254	18	502	48	539	52	3	3C216	48	28	0.74	39	1.98	1699.25
	254	18	340	13	299	13	2	3C222	25	-17	0.42	62	1.50	1699.21
	254	22	291	22	423	55	3	3C283	39	-12	0.63	-48	-6.02	1699.45
800911	255	0	442	21	331	31	3	3C298	45	25	0.71	-43	-4.51	1699.48
	255	12	400	23	337	14	3	3C144-	85	6	1.02	17	1.33	1699.27
	255	13	241	15	246	36	2	3C147	83	14	1.01	17	1.29	1699.16
	255	14	309	9	300	9	4	3C144	85	6	1.02	19	1.48	1699.22
	255	15	301	34	349	25	3	3C161	74	-2	0.96	15	0.86	1699.23
	255	21	430	26	435	30	3	3C283	38	-13	0.62	-49	-5.39	1699.54
800912	256	0	296	37	269	37	3	3C298	44	25	0.69	-43	-5.23	1699.47
	256	10	246	9	367	132	2	3C48	131	12	1.22	11	2.44	1699.16
	256	12	366	13	362	12	3	3C144-	86	6	1.02	18	1.43	1699.29
	256	13	329	9	341	9	3	3C147	84	14	1.01	16	1.24	1699.27
	256	14	364	8	355	8	4	3C144	86	6	1.02	18	1.48	1699.29
	256	15	336	11	357	12	3	3C161	75	-2	0.97	15	0.90	1699.29
	256	17	345	14	393	89	2	3C216	49	27	0.75	38	1.50	1699.28
	256	18	354	41	321	41	2	3C222	27	-15	0.45	60	1.64	1699.28
	256	19	332	11	333	11	2	3C237	19	-9	0.33	69	1.44	1699.27
800913	257	0	343	11	344	26	4	3C298	43	26	0.68	-44	-5.12	1699.53
	257	10	376	11	363	8	3	3C48	132	12	1.22	10	1.79	1699.31
	257	12	350	17	334	12	3	3C144-	87	6	1.03	17	1.43	1699.31
	257	12	201	11	347	309	2	3C94 $	114	0	1.16	12	2.33	1699.14
	257	13	345	15	356	17	3	3C147	85	14	1.02	16	1.27	1699.32
	257	14	362	9	352	9	4	3C144	87	6	1.03	18	1.45	1699.32
	257	15	424	14	326	8	3	3C161	76	-2	0.97	15	0.99	1699.37
	257	16	253	17	306	49	2	3C196	61	21	0.87	27	1.05	1699.26
	257	17	317	15	287	52	2	3C144+	87	6	1.03	18	1.48	1699.30
	257	17	354	63	382	141	2	3C216	50	26	0.77	38	1.64	1699.32
	257	18	350	14	355	13	2	3C222	28	-15	0.47	59	1.58	1699.32
	257	21	260	9	300	28	3	3C283	36	-14	0.59	-49	-6.70	1699.56
800914	258	0	369	9	296	8	4	3C298	42	27	0.67	-45	-5.12	1699.58
	258	10	351	10	347	23	2	3C48	133	12	1.22	10	1.90	1699.33
	258	12	328	23	328	14	2	3C144-	88	6	1.03	17	1.45	1699.34
	258	14	437	71	432	71	3	3C144	88	6	1.03	17	1.42	1699.39
	258	15	354	9	336	48	3	3C161	76	-2	0.97	16	1.03	1699.37
	258	21	322	10	344	13	3	3C283	35	-14	0.57	-50	-6.31	1699.63
800915	259	0	284	9	340	58	3	3C298	42	27	0.67	-46	-5.72	1699.59
	259	10	275	8	426	12	2	3C48	134	12	1.23	9	2.17	1699.30
	259	11	298	17	253	35	2	3C144-	89	6	1.04	18	1.56	1699.35
	259	14	353	68	402	35	3	3C144	89	6	1.04	17	1.47	1699.39
	259	15	326	18	380	19	3	3C161	77	-2	0.98	16	1.04	1699.39
	259	17	337	81	312	75	2	3C216	52	25	0.79	36	1.52	1699.38
	259	18	324	16	320	16	2	3C222	30	-13	0.50	58	1.45	1699.38
	259	21	358	14	329	22	2	3C283	34	-15	0.56	-51	-6.18	1699.69
	259	23	347	17	327	16	3	3C298	41	28	0.66	-47	-5.44	1699.65
800916	260	10	328	12	274	12	3	3C48	135	12	1.23	9	1.98	1699.39
	260	11	360	33	363	14	3	3C144-	90	6	1.04	17	1.50	1699.43
	260	14	400	9	397	9	3	3C144	90	6	1.04	17	1.48	1699.45
	260	15	381	25	365	13	3	3C161	78	-2	0.98	15	1.03	1699.46
	260	17	391	60	348	16	2	3C216	52	25	0.79	35	1.61	1699.44
	260	18	465	25	479	32	3	3C222	31	-13	0.52	56	2.29	1699.45
	260	19	393	16	377	22	2	3C237	23	-7	0.39	66	2.08	1699.43
	260	21	485	20	441	35	3	3C283	33	-16	0.54	-52	-5.73	1699.75
	260	23	365	21	339	14	3	3C298	40	29	0.64	-48	-5.48	1699.70
800917	261	10	397	29	400	54	3	3C48	135	12	1.23	9	1.75	1699.47
	261	11	346	15	365	51	3	3C144-	91	6	1.05	17	1.52	1699.45
	261	13	387	88	341	24	2	3C147	88	14	1.03	16	1.33	1699.48
	261	14	333	14	372	16	3	3C144	91	6	1.05	17	1.53	1699.45

SOLAR WIND

Interplanetary Scintillations

SEPTEMBER 1980

DATE	DOY	UT HR	VMID KM/S	ERR	VPK KM/S	ERR	RATING 1-4	SOURCE	ELONG DEG	LAT DEG	DIST AU	DLON DEG	LAG DAY	ROTATION NUMBER
	261	15	394	12	367	29	3	3C161	79	-2	0.99	15	1.04	1699.50
	261	16	237	19	230	38	2	3C196	64	19	0.90	24	1.01	1699.39
	261	16	401	103	392	81	3	3C144+	91	6	1.05	17	1.50	1699.49
	261	17	320	37	338	70	2	3C216	53	24	0.80	34	1.38	1699.45
	261	18	606	50	601	50	2	3C222	32	-12	0.53	56	2.76	1699.50
800918	262	11	319	14	315	15	3	3C144-	92	6	1.05	16	1.52	1699.47
	262	14	343	15	351	9	3	3C144	92	6	1.05	17	1.55	1699.49
	262	15	396	12	421	18	3	3C161	80	-2	0.99	15	1.06	1699.54
	262	16	377	18	328	16	2	3C144+	92	6	1.05	17	1.50	1699.51
	262	18	397	87	307	12	2	3C222	32	-12	0.53	56	1.98	1699.51
	262	19	450	11	446	17	2	3C237	25	-6	0.42	64	2.46	1699.51
	262	21	337	38	309	100	3	3C283	32	-17	0.53	-54	-6.73	1699.80
800919	263	9	252	9	265	54	2	3C48	137	12	1.24	9	2.39	1699.42
	263	11	319	15	297	14	3	3C144-	93	6	1.06	17	1.59	1699.51
	263	13	260	44	237	24	2	3C147	90	14	1.04	17	1.56	1699.47
	263	14	301	32	347	13	3	3C144	93	6	1.06	17	1.62	1699.50
	263	15	401	86	366	84	2	3C161	81	-2	1.00	15	1.12	1699.58
	263	17	366	26	374	17	2	3C216	55	23	0.82	34	1.58	1699.55
	263	18	312	12	296	12	3	3C222	33	-11	0.54	55	1.39	1699.52
	263	19	318	11	362	19	3	3C237	26	-6	0.44	64	1.50	1699.52
	263	21	450	82	399	42	3	3C283	31	-18	0.52	-55	-6.18	1699.87
	263	23	447	15	410	45	2	3C298	37	31	0.60	-50	-5.45	1699.84
800920	264	2	543	17	557	17	2	3C368	93	16	1.06	-13	-0.85	1699.71
	264	9	486	11	478	9	3	3C48	138	12	1.24	9	1.55	1699.62
	264	11	315	13	293	12	3	3C144-	94	6	1.06	17	1.59	1699.54
	264	12	322	10	310	38	2	3C147	91	14	1.05	15	1.42	1699.55
	264	14	436	11	418	11	3	3C144	94	6	1.06	17	1.49	1699.61
	264	15	388	11	355	12	2	3C161	82	-2	1.00	15	1.11	1699.61
	264	16	301	31	297	41	2	3C196	67	17	0.92	21	1.09	1699.56
	264	17	348	14	323	14	2	3C216	56	22	0.83	32	1.47	1699.57
	264	19	347	15	345	33	2	3C237	27	-5	0.45	62	1.76	1699.57
	264	21	498	19	397	39	3	3C283	30	-19	0.50	-55	-6.09	1699.92
	264	23	257	16	295	30	3	3C298	37	32	0.60	-51	-6.79	1699.82
800921	265	9	382	33	363	67	2	3C48	139	12	1.24	9	1.80	1699.61
	265	11	508	110	386	47	2	3C144-	95	6	1.07	17	1.49	1699.66
	265	13	340	22	312	20	2	3C144	95	6	1.07	17	1.65	1699.60
	265	16	233	42	409	52	2	3C196	68	17	0.93	21	0.95	1699.53
	265	17	281	38	285	10	2	3C216	57	22	0.84	31	1.26	1699.57
	265	17	257	33	242	50	2	3C222	35	-10	0.57	53	0.87	1699.56
	265	19	440	95	334	21	2	3C237	28	-5	0.47	61	2.36	1699.62
	265	23	334	14	366	66	3	3C298	36	33	0.59	-52	-6.25	1699.89
800922	266	9	347	7	380	8	2	3C48	139	12	1.24	9	1.91	1699.62
	266	11	389	16	421	39	2	3C144-	96	6	1.07	17	1.58	1699.66
	266	13	387	15	341	30	3	3C144	96	6	1.07	16	1.56	1699.66
	266	15	303	8	315	12	3	3C161	83	-2	1.01	15	1.13	1699.63
	266	17	356	59	365	59	2	3C216	57	21	0.84	31	1.44	1699.65
	266	18	260	8	258	16	3	3C237	29	-5	0.48	61	0.87	1699.61
	266	23	334	13	438	15	2	3C298	35	34	0.57	-52	-6.33	1699.94
800923	267	9	335	33	345	8	3	3C48	140	12	1.24	8	1.95	1699.65
	267	14	470	53	476	268	2	3C161	84	-2	1.01	16	1.19	1699.74
	267	18	227	38	339	36	2	3C222	37	-9	0.60	51	0.59	1699.61
	267	18	315	17	315	21	3	3C237	30	-5	0.50	60	1.52	1699.66
	267	23	274	24	265	8	4	3C298	34	35	0.56	-52	-6.94	1699.95
800924	268	17	355	15	395	55	2	3C222	38	-9	0.62	50	1.73	1699.72
	268	18	311	11	397	13	2	3C237	31	-4	0.52	59	1.52	1699.70
	268	23	281	12	263	7	4	3C298	33	36	0.54	-53	-7.08	1700.00
800925	269	11	370	15	355	25	3	3C144-	99	6	1.09	16	1.64	1699.76
	269	12	251	72	341	11	2	3C147	95	13	1.07	16	1.68	1699.67
	269	13	333	9	331	9	4	3C144	99	6	1.09	16	1.69	1699.74
	269	14	457	*	506	*	3	3C161	86	-2	1.02	14	1.16	1699.81
	269	17	387	21	336	55	2	3C222	39	-9	0.63	50	1.93	1699.76
	269	18	415	33	393	48	2	3C237	32	-4	0.53	58	2.26	1699.76
	269	20	314	49	307	21	3	3C283	26	-24	0.44	-58	-7.74	1700.08

SOLAR WIND

Interplanetary Scintillations

SEPTEMBER 1980

DATE	DOY	UT HR	VMID KM/S	ERR	VPK KM/S	ERR	RATING 1-4	SOURCE	ELONG DEG	LAT DEG	DIST AU	DLON DEG	LAG DAY	ROTATION NUMBER
	269	23	313	9	331	13	3	3C298	33	37	0.54	-54	-6.85	1700.05
800926	270	14	515	59	363	24	2	3C161	87	-2	1.03	15	1.24	1699.86
	270	16	267	22	274	11	2	3C216	61	19	0.87	28	1.21	1699.74
	270	17	355	26	489	46	2	3C222	40	-8	0.64	48	1.73	1699.79
	270	18	294	11	331	22	3	3C237	33	-4	0.54	57	1.40	1699.76
	270	20	246	9	313	106	2	3C263	25	-25	0.42	-58	-8.78	1700.10
	270	23	286	7	288	7	3	3C298	32	38	0.53	-54	-7.19	1700.08
800927	271	13	380	26	301	10	2	3C144	101	6	1.10	16	1.62	1699.84
	271	17	255	13	352	138	2	3C222	41	-8	0.66	47	1.04	1699.78
	271	20	249	59	231	33	2	3C283	24	-26	0.41	-59	-8.91	1700.14
	271	23	259	28	318	12	3	3C298	31	39	0.52	-54	-7.64	1700.11
800928	272	14	392	7	379	7	3	3C161	88	-2	1.03	15	1.24	1699.89
	272	15	301	15	306	36	3	3C196	74	14	0.96	16	0.94	1699.85
	272	16	299	9	323	12	2	3C216	63	18	0.89	25	1.20	1699.84
	272	17	393	20	357	12	2	3C222	42	-7	0.67	47	1.93	1699.87
	272	18	296	11	352	13	3	3C237	35	-3	0.57	54	1.37	1699.84
	272	21	308	9	307	56	3	3C295	59	37	0.86	5	-0.51	1699.92
	272	23	330	9	338	26	4	3C298	30	40	0.50	-55	-7.00	1700.18
800929	273	11	327	11	336	12	3	3C144-	103	5	1.11	15	1.73	1699.87
	273	12	298	14	298	9	3	3C147	99	13	1.09	16	1.71	1699.86
	273	13	349	8	352	8	4	3C144	103	5	1.11	17	1.79	1699.89
	273	14	347	20	439	11	2	3C161	89	-2	1.04	15	1.30	1699.91
	273	15	316	20	284	18	3	3C196	74	14	0.96	18	1.08	1699.90
	273	18	459	34	453	21	2	3C237	36	-3	0.59	53	2.31	1699.92
	273	20	310	61	660	148	2	3C283	22	-29	0.37	-59	-8.28	1700.24
	273	21	211	27	279	36	2	3C295	59	37	0.86	6	-0.86	1699.87
	273	23	304	8	375	10	4	3C298	30	41	0.50	-56	-7.33	1700.21
800930	274	4	415	43	358	56	2	3C409	116	17	1.16	-8	0.06	1700.01
	274	10	318	19	327	15	3	3C144-	104	5	1.11	16	1.80	1699.90
	274	12	294	12	320	18	2	3C147	100	13	1.09	14	1.63	1699.89
	274	13	374	30	384	18	4	3C144	104	5	1.11	16	1.69	1699.94
	274	15	439	74	437	92	2	3C196	75	14	0.97	17	1.14	1699.99
	274	15	291	36	276	16	2	3C144+	104	5	1.11	16	1.86	1699.89
	274	16	367	64	375	15	2	3C216	64	17	0.90	24	1.29	1699.96
	274	18	404	30	389	25	2	3C237	37	-3	0.60	53	2.14	1699.95
	274	20	311	34	301	73	2	3C283	22	-31	0.37	-60	-8.33	1700.28
	274	23	340	27	349	12	3	3C298	29	43	0.48	-57	-7.14	1700.26

VMID IS A MEAN AND VPK IS A MAXIMUM VELOCITY IN THE IPS SCATTERING REGION
THE REGION'S CENTROID IS SPECIFIED BY LAT, DIST, DLON.
LAG AND ROTATION NUMBER GIVE MAPPING TO EARTH AND SUN AT VMID
* INDICATES NO ERROR AVAILABLE, SINCE ONLY TWO ANTENNAS WERE OPERATING

STANFORD MEAN SOLAR MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1996	JUL 27	□	□	□	□	□	□	□	□	□	▥	■	■	■	■	■	■	■	■	■	■	■	■	■	□		□	□
1997	AUG 23	□	□	□	□	□	□	□	▥	▥	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	□
1998	SEP 19	□	□	□	□	□	□	□	□	□	□	□	□	■	■	■	■	■	■	■	■				■	■	■	
1999	OCT 16	■	□	□	□	□	□	□	□	□	□	□	□	□	■	■	■	■			■	■	■	■	■	■	□	□
2000	NOV 12	□	□	□	□		□	□	□	□	□		□		□	□	□	□	□	□	□	■	■	■	■	▥	□	□
2001	DEC 9	□	□	□	□	□	□	□	□	□			□	□	■			□	□	□	□	■			■	■	▥	
2002	1980 JAN 5			□	□										■	■	□	□	□	□	■	■	■		■	■	■	□
2003	FEB 1	□	□	□	□	□	□	□	□	□	▥	□	□	□					□	■	□	■		■			□	□
2004	FEB 28	□	□			□	□	□	▥	▥	■		□	□	▥	■		▥	■	■	■	■	■	■	■	■	■	□
2005	MAR 26	□	□	□	□	□	□	■	■	■		■	■	□	□	□	□	□	▥	■	■	■	■	■	■	■		□
2006	APR 22	□	□	□	□	□	□	■	■	■	■	□	□	□	□	■	■	■		■				□	□	▥	□	□
2007	MAY 19	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	■	■	■	■	■	▥	■	■	■	□	□
2008	JUN 15	□		□	□	□	□	■	■	▥	□	□	□	□	□	□	■	■		■	■	■		□	□	□	□	□
2009	JUL 12	□	□		□	□	■	■	■	□	□	□	□	□	□	□	■	■	■	■	■	■		□	□	□	□	□
2010	AUG 8	□	□	□	□	□	■	■	■	■	■	■	▥	□	□	□	■	■	■	■	■	■	■	■	■	■	□	□
2011	SEP 4	□	□	□	□	□	■	■	■	■	■		■	■	□		■	■	■	■	■	■	■	□	□	□	□	□

POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT
No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

1979 1980

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

	1979			1980								
DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.
01	-32	-6	16	-37	94	.	-10	-7	37	-51	-5	-19
02	-27	.	-3	-28	96	.	-26	9	13	.	.	5
03	-27	.	-24	1	87	50	-21	26	-16	-25	8	8
04	-36	-5	-18	.	72	53	.	55	-45	-23	7	29
05	-45	-8	-6	.	72	12	-44	21	-57	-19	10	42
06	-31	-17	-1	.	57	-1	-17	-13	-42	.	24	42
07	-22	-12	18	54	49	1	9	-34	-25	8	53	23
08	-45	-3	35	59	31	-8	4	-42	-11	11	53	9
09	.	-6	75	.	10	.	7	.	-1	13	44	-27
10	.	6	99	.	0	9	7	-17	-6	23	37	-68
11	.	29	83	.	10	21	5	.	-18	44	27	-77
12	-55	46	60	.	11	1	2	.	-4	42	8	-84
13	-62	52	32	.	3	-7	-15	.	12	34	-37	-62
14	-49	45	44	.	.	.	-18	5	56	.	-63	.
15	.	26	29	.	.	-2	-12	5	54	57	-65	-39
16	-6	.	20	.	.	-10	-14	-1	.	26	-56	-16
17	20	13	18	.	.	-9	-8	16	63	-42	-44	7
18	29	41	.	-17	5	-8	-10	50	71	-69	-24	.
19	25	35	.	-8	-13	-18	-5	73	55	-43	1	-18
20	52	35	7	33	3	-42	.	78	15	5	23	-38
21	64	30	6	32	-7	-41	30	92	-40	32	24	-31
22	69	.	-6	10	.	-39	95	120	-43	47	11	-15
23	48	22	.	3	-32	-24	113	122	-1	53	-11	-7
24	50	.	.	-12	.	-20	113	46	33	57	-31	-22
25	35	12	35	-25	.	13	100	14	49	53	-38	-21
26	26	20	40	-31	6	43	56	25	37	27	-27	8
27	16	27	27	.	43	53	8	64	46	-8	-27	18
28	3	24	23	-34	58	64	-27	57	54	-33	-18	18
29	-9	39	-18	-26	57	84	-28	62	6	-42	-14	18
30	-7	37	.	-13		75	-16	49	-22	-29	-18	25
31	-22		.	29		25		49		-6	-10	

DOT SYMBOL ENTRY INDICATES NO DATA AVAILABLE FOR THE DAY.

BOULDER GEOMAGNETIC SUBSTORM LOG

SEPTEMBER 1980

DATE	ONSET TIME	DIR	COMMENTS
09/01			Field unsettled through 0800 UT.
	0530	≈ center	Several injections with recovery near 0750 UT.
09/02			Field slightly unsettled.
09/03			Field unsettled after 1300 UT.
	1725		SS confined to Norman Wells and Alaskan chain, show SS expansion northward from College.
09/04			Field intermittently unsettled with no distinctive SS activity.
09/05			Field unsettled with no distinctive SS activity.
09/06			Field slightly unsettled.
	1440		Slow onset, weak SS with recovery near 1730 UT.
09/07	0955		Field intermittently unsettled. Weak SS, College to Ft. Yukon to Ft. Simpson.
09/08			Field slightly unsettled.
	0855		Weak SS, College to Ft. Yukon.
	0950		Weak SS, College to Ft. Yukon.
09/09			Field unsettled 0500-1800 UT.
	1440		Slow onset SS, localized Norman wells to Inuvik.
09/10			Field slightly unsettled.
09/11			Field intermittently unsettled.
	1530		Weak SS
09/12			Field unsettled after 0500 UT.
	0715	West	Moderate SS
	1715		Moderate SS along Auroral Oval.
09/13	0350	East	Moderate response Boulder and Tucson, weak SS balance of network.
	1220	West	Moderate SS
09/14			Field slightly unsettled.
09/15			Field intermittently unsettled.
	0610		Weak SS, localized at Lynn Lake.
	1115	West	
09/16			Field slightly unsettled.
	0820		Weak SS, localized at Lynn Lake.
09/17	0830		Polar Cap SS, Inuvik to Sachs Harbour.
	1050		Localized SS, College and Talkeetna.
	1135	West	
09/18	0810	West	
09/19	1115		Several injections with recovery near 1400 UT. SS activity confined to oval stations.
09/20	0135		Weak positive impulse H-component all mid-low latitude stations. Field only slightly unsettled through 0500 UT.
09/21			Quiet day
09/22	0950	West	Weak SS
	1345	West	
09/23	1025	West	Weak SS
09/24	0835	West	Weak SS
09/25	0300	East	Weak SS, several injections.
	0720	≈ center	Weak SS
	0815	≈ center	Weak SS
09/26			Field intermittently unsettled with no distinctive SS activity.
09/27			Field slightly unsettled.
09/28	1350		Slow onset from Ft. Simpson to College to Ft. Yukon. Distinct SS onset at 1430 UT localized Inuvik to Norman Wells. Field recovery near 1550 UT.
09/29			Field slightly unsettled after 1600 UT. Polar Cap stations moderately unsettled after 1600 UT.
09/30			Field slightly unsettled.

SGD 434 Part 1 (Prompt)

AUGUST 1980 DATA

Contents

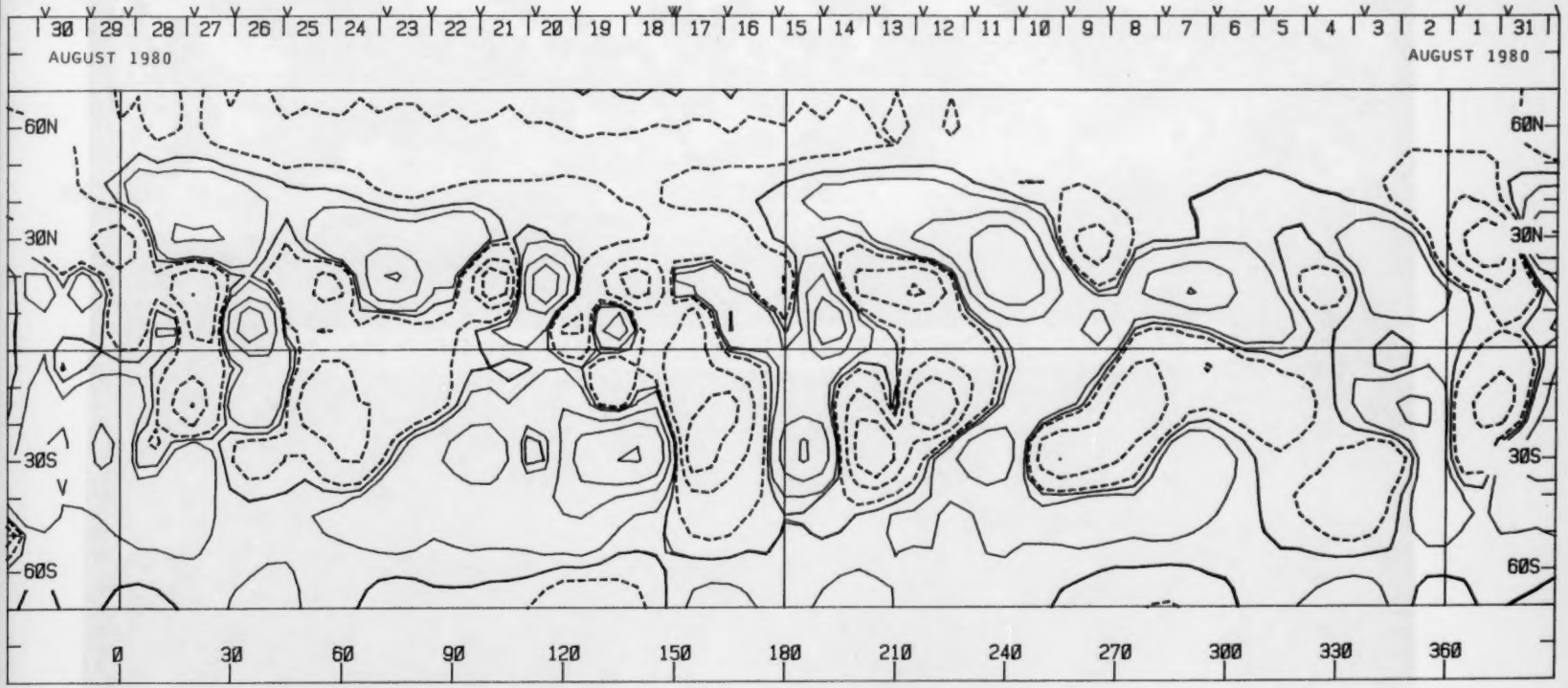
	Page
Daily Solar Activity Centers	
H-alpha Synoptic Charts (data delayed) and Solar Magnetic Field Synoptic Charts	43-45
Magnetograms, Calcium Plages, H-alpha Filtergrams, Sunspots, Corona, and 2 cm and 8.6 mm Spectroheliograms	46-107
Regions of Solar Activity	108-125
Daily Calcium Plage Index	125
Sudden Ionospheric Disturbances	126-128
Spacecraft Observations	
Pioneer XII Magnetic Field Magnitudes (Uncontaminated measurements not available.)	
Solar Radio Emission	
Spectral Observations	129-141
Cosmic Rays	
Chart of Variations	142-145
Neutron Monitors Daily Values	146
Geomagnetic Indices	
Geomagnetic Activity Indices (Kp, Ap, Cp, Km, Am, aa, Kn, An, Ks, As)	147
Daily Average Indices Ap	148
Chart of Kp by Bartels 27-day Rotation	149
Chart of Dst by Bartels 27-day Rotation	150
Hourly Equatorial Dst Values (Provisional)	151
Principal Magnetic Storms	152
Sudden Commencements and Solar Flare Effects (Data not available at time of publication.)	
Radio Propagation Indices	
Quality Indices on Paths to Germany	153
Transmission Frequency Ranges - North Atlantic Path	154-155

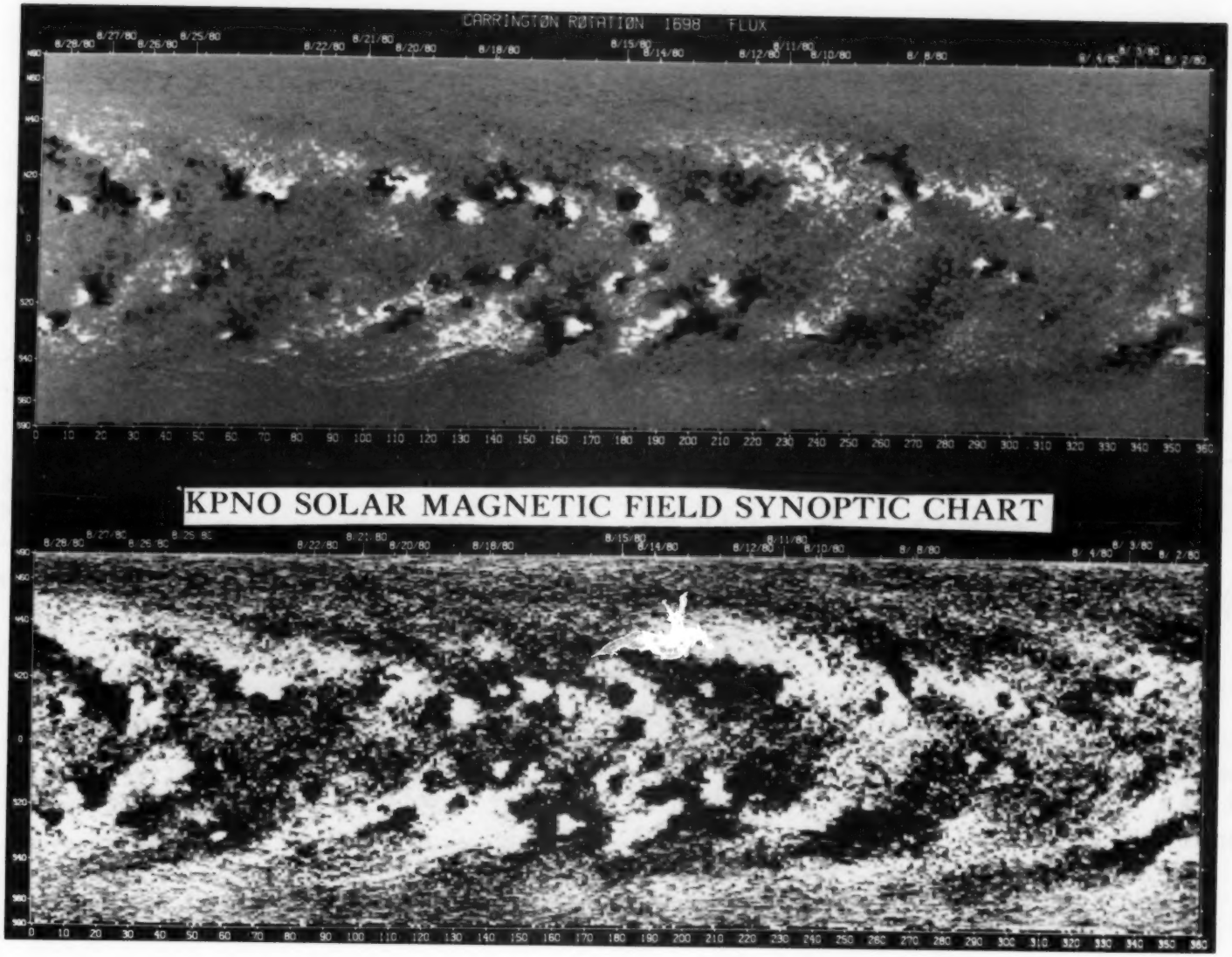
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1698

Stanford Solar Observatory

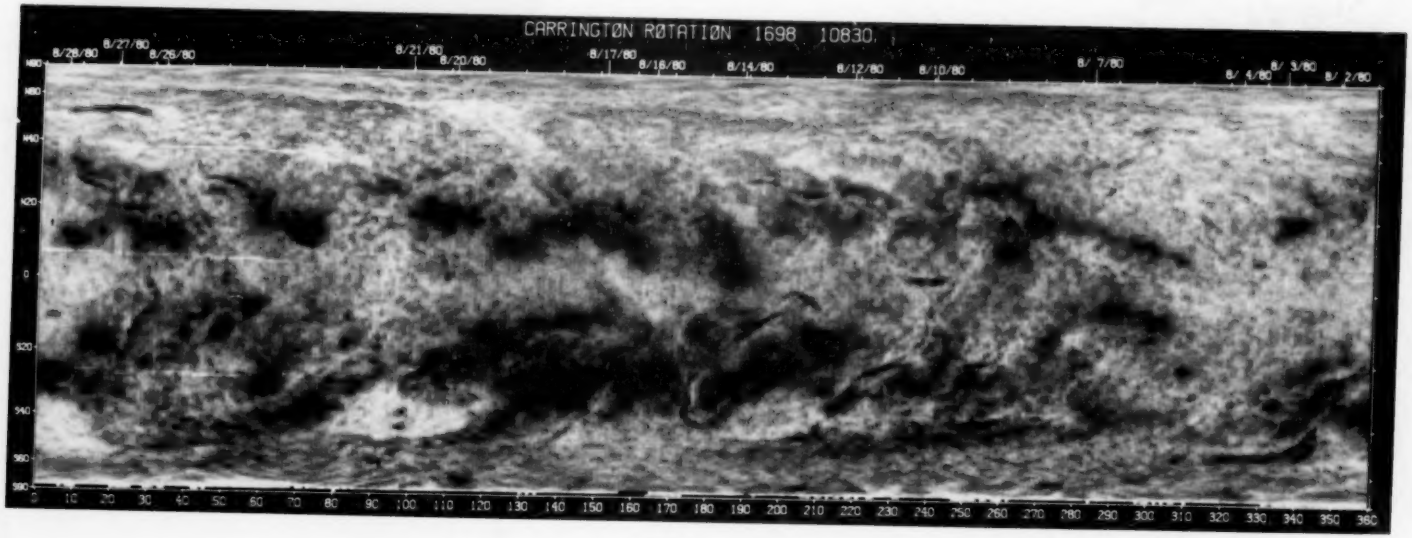
0,±100,200,500... μT




CARRINGTON ROTATION 1698 FLUX
KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS
CARRINGTON ROTATION 1698

KITT PEAK NATIONAL OBSERVATORY



AUGUST 1, 1980 (P = 10.89, B_o = 5.82, L_o = 13.03)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å

E

W

1740 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1405 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.4

E

W

Levels
± 5
± 10
± 20
± 40
± 80

16.41-18.12 UT

Sp

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

1405 UT

Sp

16.41-18.12 UT

Sp

± 40
± 80

BOULDER

Np

E W

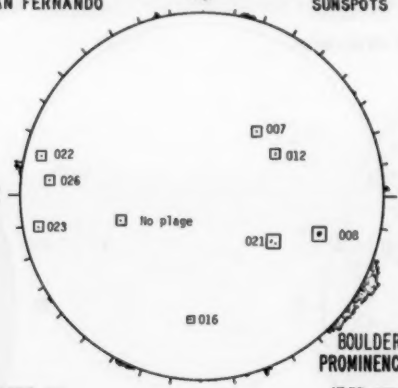
1353 UT

Sp

Hα

SAN FERNANDO

Np



E W

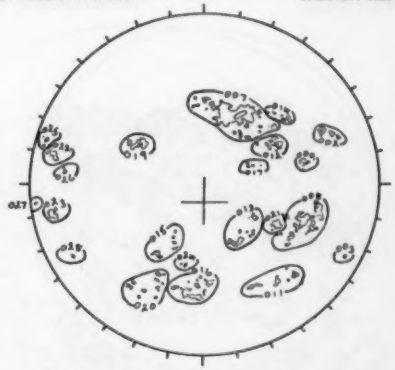
1430 UT

Sp

SUNSPOTS

HALE OBSERVATORIES

Np



E W

1646 UT

Sp

CALCIUM REPORT

BOULDER PROMINENCES

1353 UT

	FAIR	JA
02- 0600-3.0		
03- 0100-2.5		
07- 3700-4.0		
08- 2100-3.5		
09- 0200-3.0		
11- 0500-2.5		
12- 0400-3.0		
13- 0600-3.0		
14- 0300-3.0		
15- 0300-2.5		
16- 0806-3.0		
17- 0200-2.5		
19- 0600-3.5		
20- 0600-2.5		
21- 0300-3.0		
22- 0500-3.5		
23- 0400-3.5		
24- 0100-2.5		
25- 0200-2.5		
26- 0200-3.0		
27- 0100-2.5		
28- 0100-2.5		

NOSC LA POSTA Np 2.0 CM

NO DATA

E EQUIPMENT W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

E EQUIPMENT W

---- UT Sp Ant. Temp. Unit 100° K

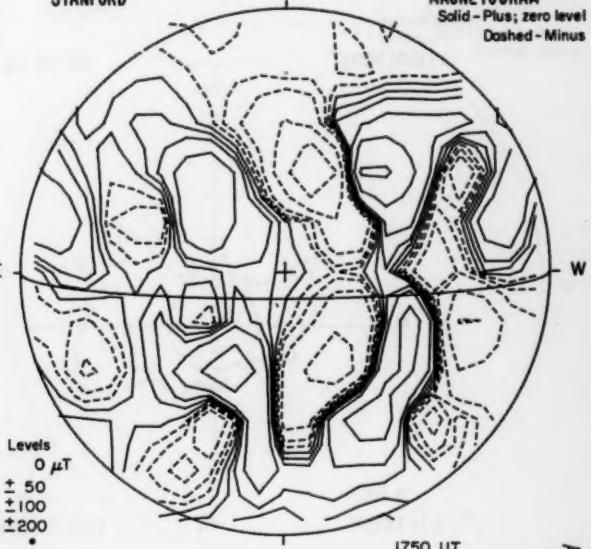
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

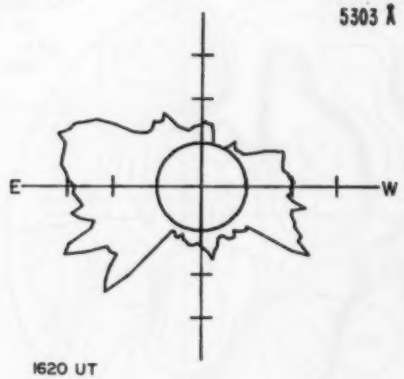
1750 UT

Sp

AUGUST 2, 1980 (P = 11.29, B_o = 5.89, L_o = 359.81)

SACRAMENTO PEAK

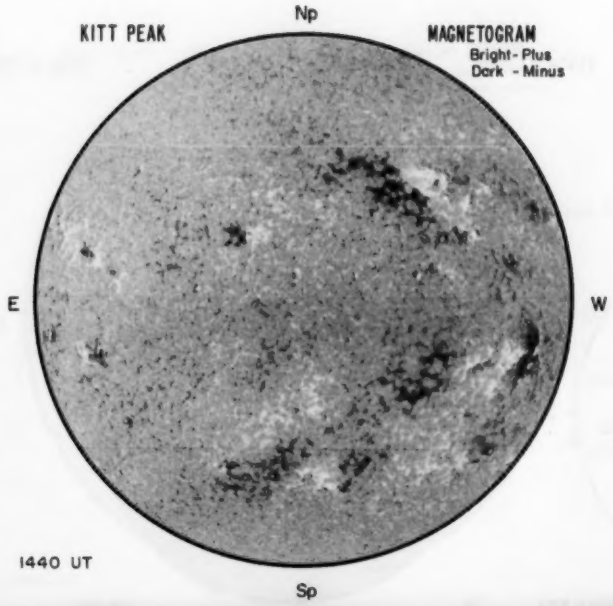
CORONA (1.15 $R_\odot$)
5303 Å



1620 UT

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

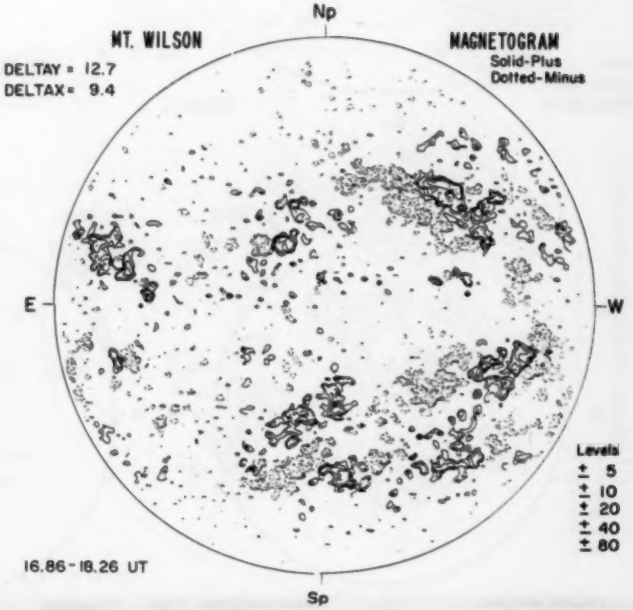


1440 UT

MT. WILSON

DELTAY = 12.7
DELTAX = 9.4

MAGNETOGRAM
Solid-Plus
Dotted-Minus

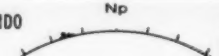


16.86 - 18.26 UT

BOULDER

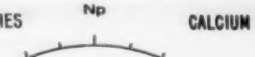
Hα

SAN FERNANDO



SUNSPOTS

HALE OBSERVATORIES



CALCIUM REPORT

1440 UT

Sp

16.86-18.26 UT

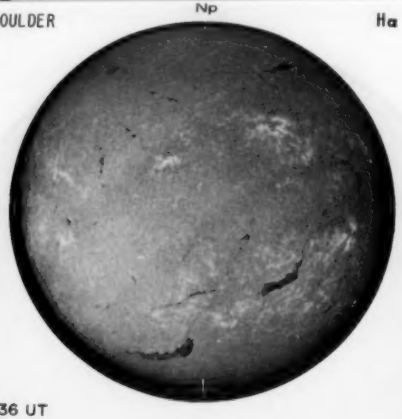
Sp

± 80

BOULDER

Np

Hα



E

W

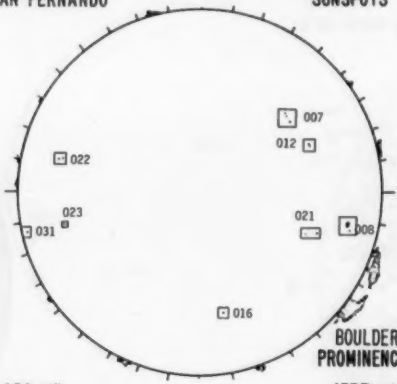
1536 UT

Sp

SAN FERNANDO

Np

SUNSPOTS



E

W

1450 UT

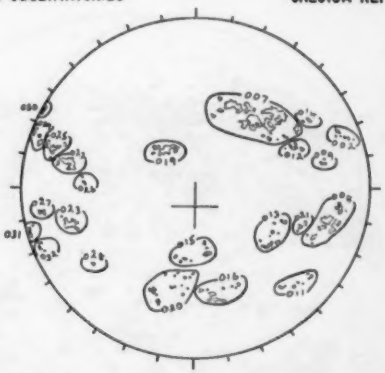
Sp

BOULDER PROMINENCES

1537 UT

HALE OBSERVATORIES

Np



E

W

1822 UT

Sp

CALCIUM REPORT

FAIR	JA

02- 0300-3.0
07- 3800-3.5
08- 1500-3.0
09- 0100-2.5
11- 0300-2.5
12- 0200-3.0
13- 0500-3.0
14- 0100-3.0
15- 0400-2.5
16- 0500-3.0
19- 0500-3.5
20- 0500-2.5
21- 0200-2.5
22- 0600-3.0
23- 0500-3.0
25- 0600-3.0
26- 0100-2.5
27- 0200-3.0
28- 0100-3.0
29- 0600-3.0
31- 0300-2.5
32- 0100-2.5

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

NO DATA

E

W

Sp

Levels

0 μT

± 50

±100

±200

49

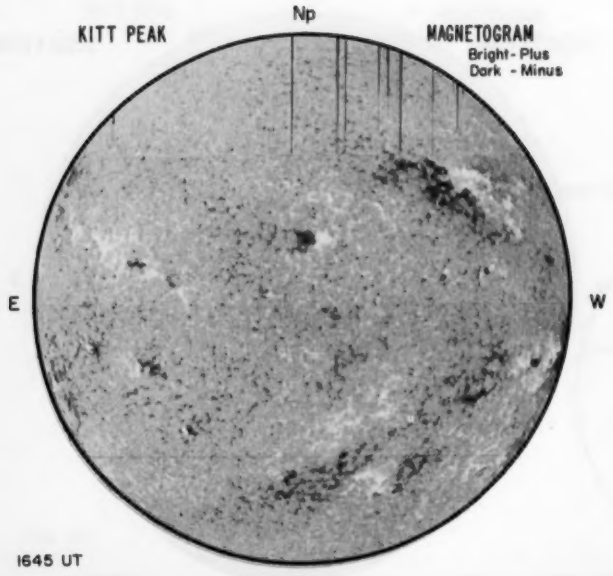
Aug 80

AUGUST 3, 1980 (P = 11.68, B_o = 5.96, L_o = 346.58)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

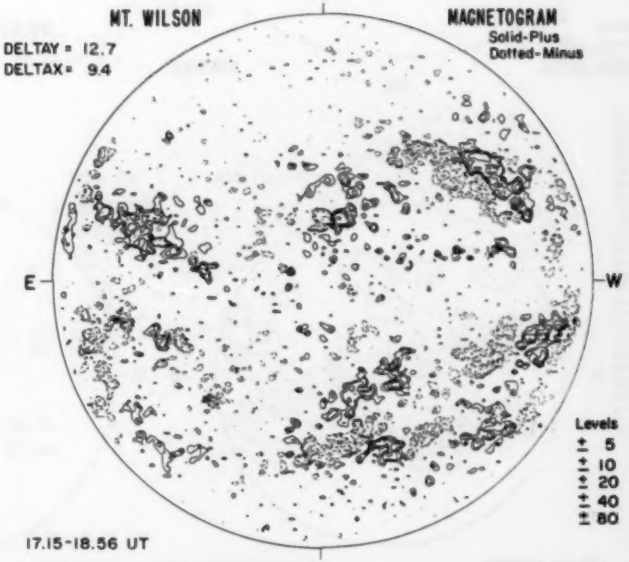
E NO DATA 3-4 AUG W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



1645 UT

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.4



17.15-18.56 UT

Sp

BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1645 UT

Sp

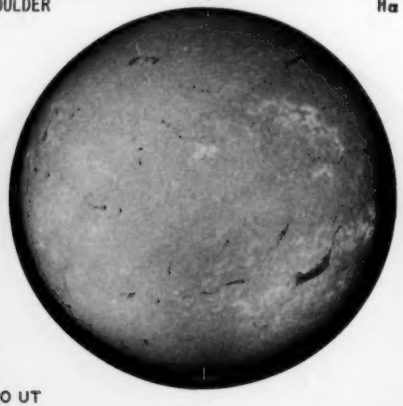
17.15-18.56 UT

Sp

BOULDER

Np

Hα



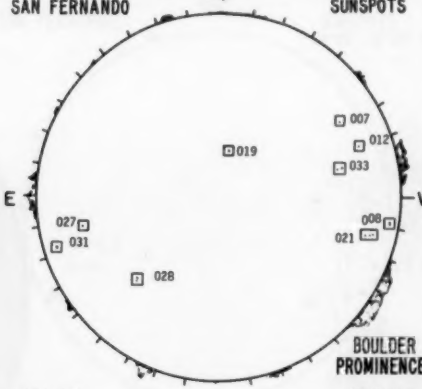
E W

1510 UT

Sp

SAN FERNANDO

Np



E W

1620 UT

Sp

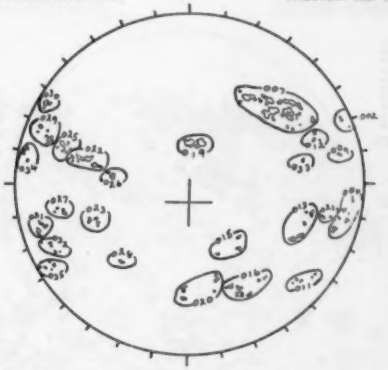
SUNSPOTS

BOULDER PROMINENCES

1510 UT

HALE OBSERVATORIES

Np



E W

1742 UT

Sp

CALCIUM REPORT

FAIR	JA

02- 0200-2.5
07- 2400-3.5
08- 0500-2.5
09- 0100-2.5
12- 0200-3.0
13- 0400-2.5
15- 0200-2.5
16- 0500-2.5
19- 0500-3.0
20- 0400-2.5
21- 0200-2.5
22- 0600-3.0
23- 0200-3.0
25- 0500-3.0
26- 0200-3.0
27- 0200-3.0
28- 0100-3.0
29- 0400-3.0
30- 0300-3.0
31- 0300-2.5
32- 0200-2.5
33- 0100-3.0
34- 0300-3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

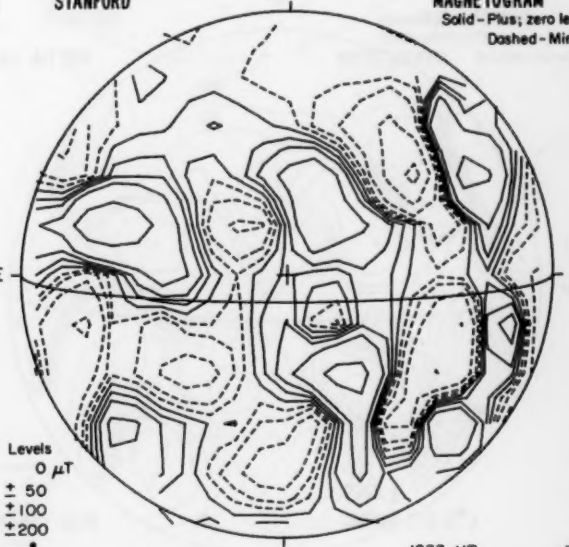
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

•

•

•

1833 UT

Sp

51

Aug 80

AUGUST 4, 1980 (P = 12.07, B_o = 6.02, L_o = 333.36)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

E W

1520 UT Sp

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.4

E W

Levels
± 5
± 10
± 20
± 40
± 80

16.50-18.34 UT Sp

04
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1520 UT

Sp

16.50-18.34 UT

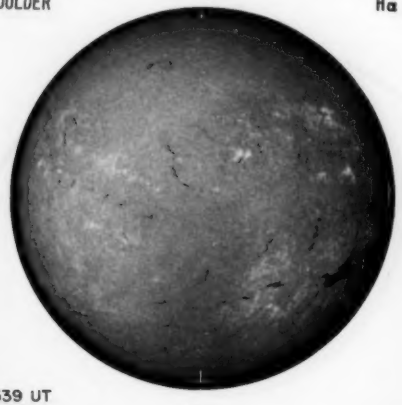
Sp

04

BOULDER

Np

Hα



E W

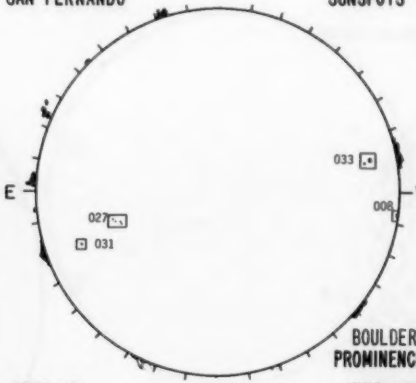
1539 UT

Sp

SAN FERNANDO

Np

SUNSPOTS



E W

1730 UT

Sp

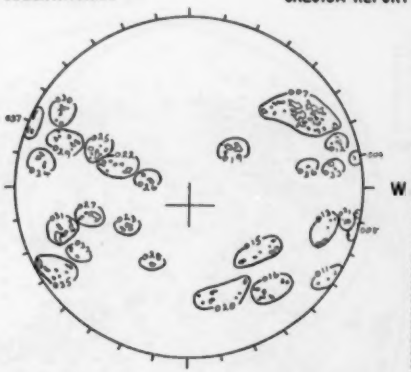
BOULDER PROMINENCES

1539 UT

HALE OBSERVATORIES

Np

CALCIUM REPORT



E W

1650 UT

Sp

FAIR	JA
07- 2800-3.0	
09- 0130-2.5	
12- 0200-2.5	
13- 0300-2.5	
16- 0500-2.5	
19- 0400-3.0	
20- 0400-2.5	
22- 0400-3.0	
23- 0200-3.0	
25- 0500-3.0	
26- 0200-3.0	
27- 0400-3.0	
28- 0100-3.0	
29- 0900-3.0	
30- 0300-3.0	
31- 0600-3.0	
32- 0200-3.0	
33- 0200-3.5	
34- 0300-3.0	
35- 0600-3.0	
37- 0500-2.5	

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

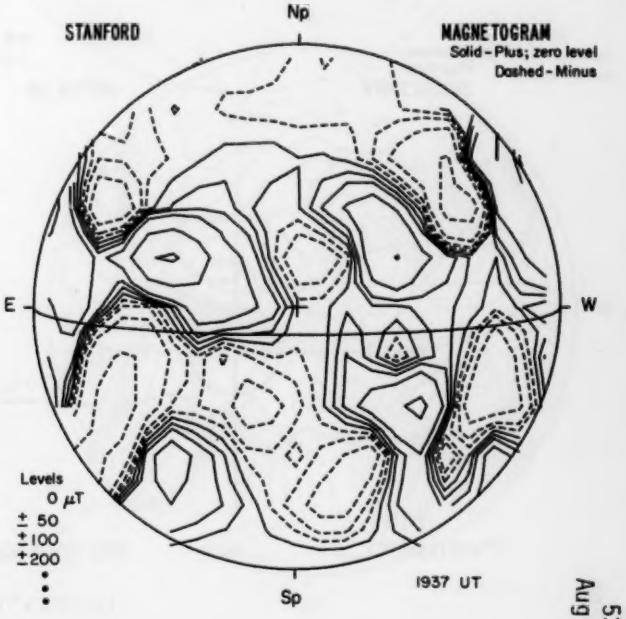
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1937 UT

Sp

53

Aug 80

AUGUST 5, 1980 (P = 12.45, B_o = 6.09, L_o = 320.13)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å

E

W

1636 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

NO DATA

W

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.4

E

W

Levels
± 5
± 10
± 20
± 40
± 80

16.02-17.42 UT

Sp

05

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

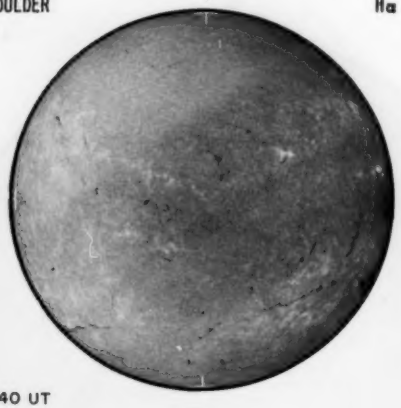
Sp

Sp

05

BOULDER

Np



E W

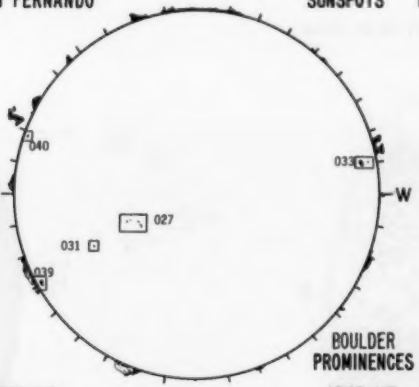
1640 UT

Sp

Hα

SAN FERNANDO

Np



E W

1730 UT

Sp

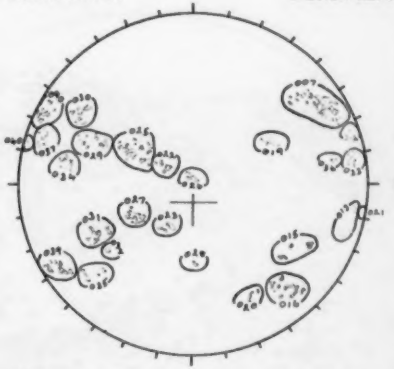
SUNSPOTS

BOULDER PROMINENCES

1640 UT

HALE OBSERVATORIES

Np



E W

1643 UT

Sp

CALCIUM REPORT

	FAIR	JA
07-	2100	-3.0
12-	0200	-2.5
13-	0200	-2.5
15-	0300	-2.5
16-	0800	-3.0
19-	0400	-3.5
20-	0200	-2.5
21-	0100	-2.5
22-	0200	-3.0
23-	0300	-3.0
25-	0900	-3.0
26-	0200	-3.0
27-	0500	-3.0
28-	0100	-2.5
29-	0500	-3.0
30-	0700	-3.0
31-	0800	-3.0
32-	0100	-3.0
33-	0400	-3.0
34-	0400	-3.0
35-	0300	-2.5
36-	0100	-3.0
37-	0400	-3.0
39-	0600	-3.0
40-	0200	-3.0
90-	0700	-3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

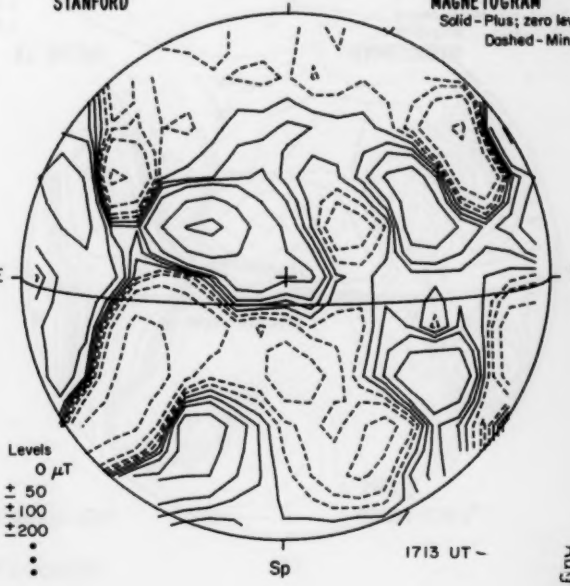
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1713 UT -

Sp

55

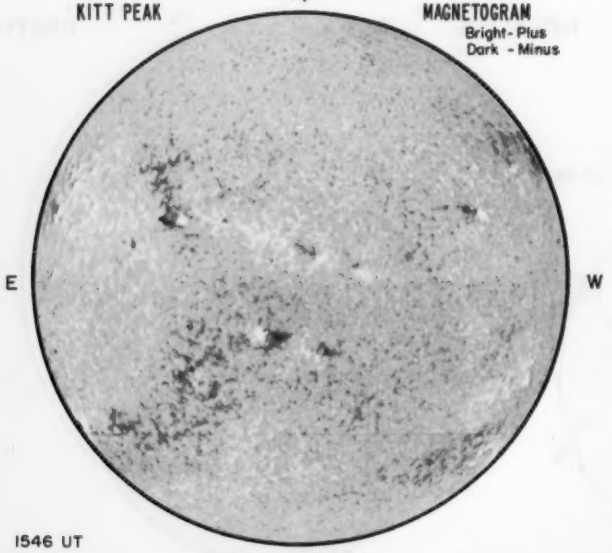
Aug 80

AUGUST 6, 1980 (P = 12.83, B_o = 6.16, L_o = 306.91)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

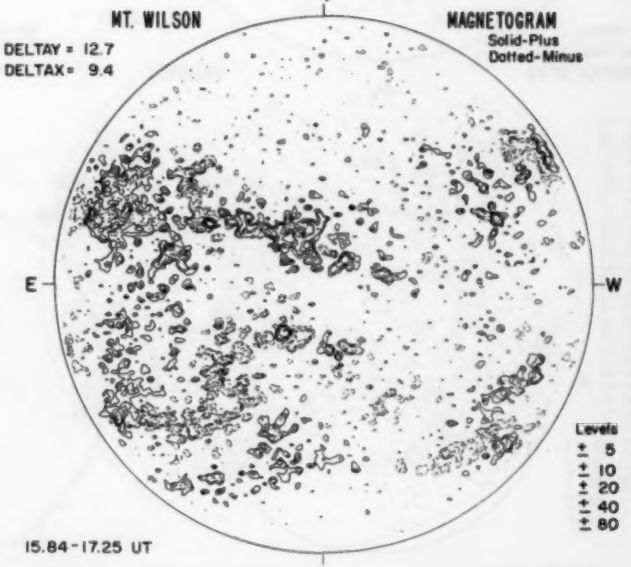
E NO DATA 6-10 AUG W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



1546 UT

MT. WILSON Sp Np MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.4



15.84-17.25 UT

06
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

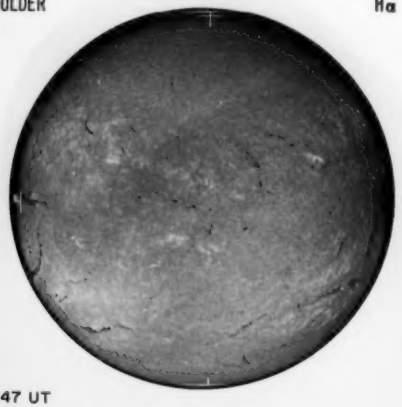
Sp

Sp

06

BOULDER

Np



E W

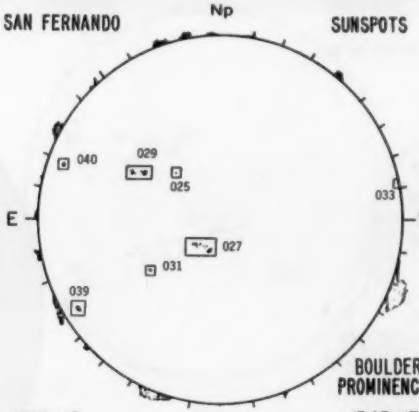
1347 UT

Sp

Hα

SAN FERNANDO

Np



E W

1620 UT

Sp

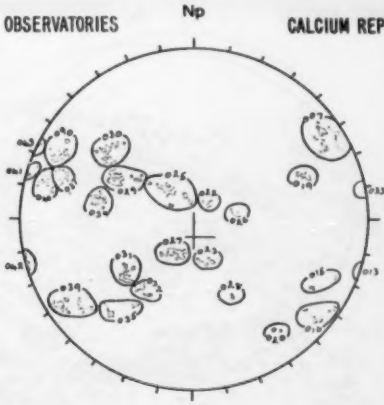
SUNSPOTS

BOULDER PROMINENCES

1347 UT

HALE OBSERVATORIES

Np



E W

1647 UT

Sp

CALCIUM REPORT

	FAIR	JA
07-	1700	3.0
15-	0200	2.5
16-	0300	3.0
19-	0400	3.5
20-	0100	2.5
22-	0100	3.0
23-	0200	3.0
25-	0600	3.0
26-	0200	3.0
27-	0400	3.5
28-	0100	2.5
29-	0700	3.0
30-	0600	3.0
31-	0500	3.0
32-	0200	3.0
33-	0200	3.0
34-	0400	3.0
35-	0300	3.0
37-	0400	3.0
39-	0800	3.0
40-	0500	3.0
41-	0100	2.5
42-	0600	3.0
43-	0300	2.5
90-	0800	3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E EQUIPMENT W

---- UT

Sp Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E EQUIPMENT W

---- UT

Sp Ant. Temp. Unit 100° K

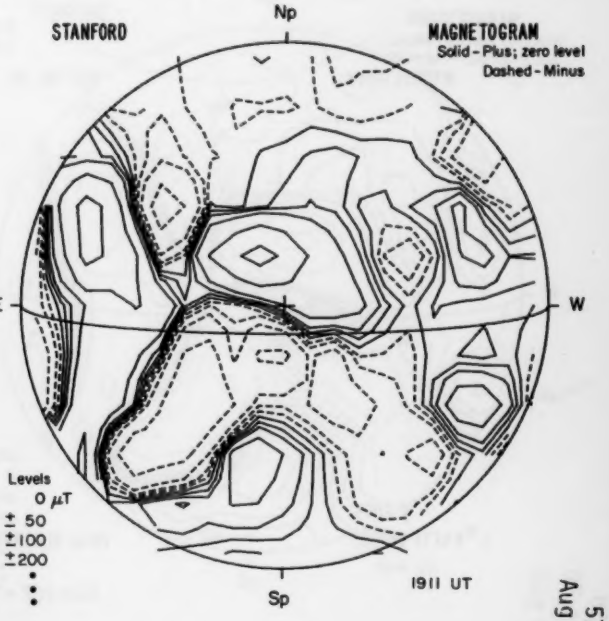
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1911 UT

Sp

57

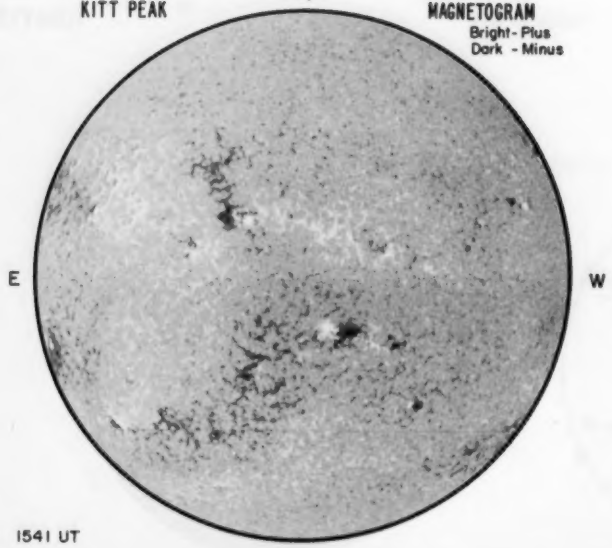
Aug 80

AUGUST 7, 1980 (P = 13.21, B_o = 6.22, L_o = 293.69)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

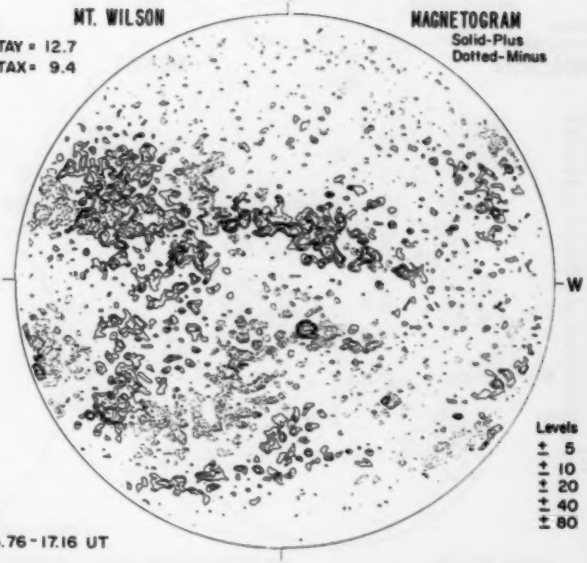
E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W
1541 UT
Sp

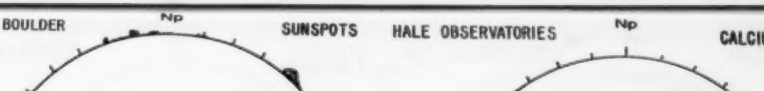
Sp
Np
MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus
DELTAY = 12.7
DELTAX = 9.4



E W
Levels
± 5
± 10
± 20
± 40
± 80
15.76 - 17.16 UT
Sp

BOULDER Np Hα

BOULDER Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT



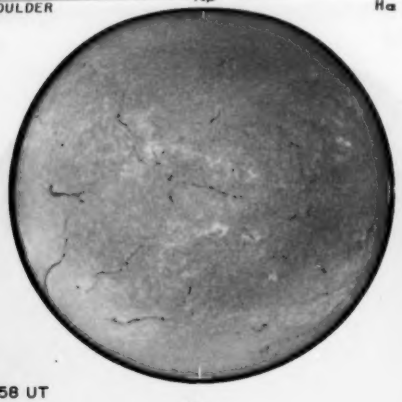
1541 UT

Sp

BOULDER

Np

Hα



E

W

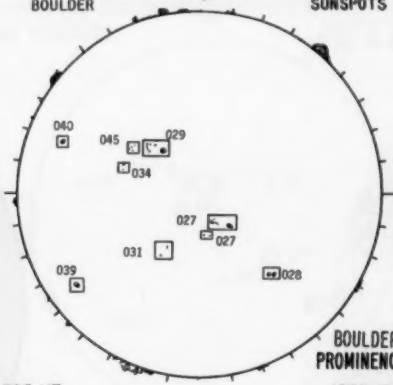
1358 UT

Sp

BOULDER

Np

SUNSPOTS



E

W

1625 UT

Sp

HALE OBSERVATORIES

Np

E

W

1629 UT

Sp

CALCIUM REPORT

FAIR	JA
07- 0800-3.0	
15- 0100-2.5	
16- 0200-2.5	
19- 0200-3.5	
22- 0100-3.0	
23- 0200-3.0	
25- 0700-3.0	
26- 0100-2.5	
27- 0500-3.0	
28- 0100-3.0	
29- 1000-3.5	
30- 0700-3.0	
31- 0200-3.0	
32- 0300-3.0	
34- 0400-3.0	
35- 0400-3.0	
37- 0600-3.0	
39- 1200-3.5	
40- 0300-3.0	
41- 0800-3.0	
42- 1700-3.5	
43- 0400-3.0	
44- 0800-3.0	
90- 0900-3.0	

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

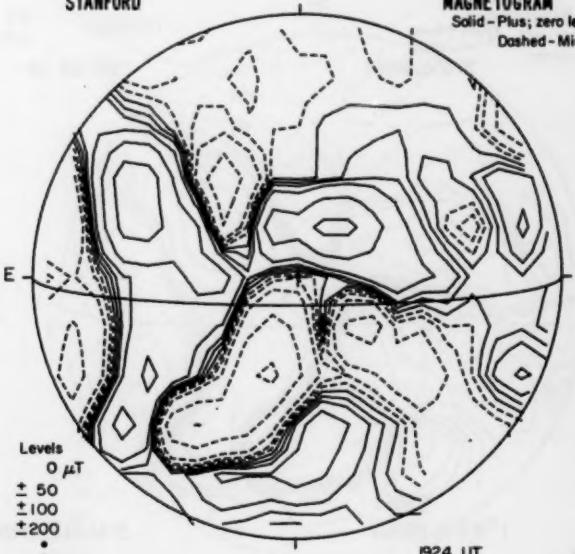
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E

W

Levels

0 μT

± 50

±100

±200

1924 UT

Sp

59

Aug 80

AUGUST 8, 1980 (P = 13.58, B_o = 6.28, L_o = 280.47)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

E W

1559 UT

Sp

Sp
Np

MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.7
DELTAX = 9.4

E W

Levels
± 5
± 10
± 20
± 40
± 80

16.87 - 18.27 UT

Sp

08

Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1559 UT

Sp

16.87-18.27 UT

Sp

08

Np

E

NO DATA

W

Sp

Hα

SAN FERNANDO

Np

090 040 045 029 025 034 027 031 028 039

E W

1605 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

NO DATA

HALE OBSERVATORIES

Np

E W

1648 UT

Sp

CALCIUM REPORT

FAIR	JA
07- 0100-3.0	
15- 0100-2.5	
16- 0100-2.5	
19- 0200-3.0	
20- 0100-2.5	
22- 0200-2.5	
23- 0100-2.5	
25- 0900-3.0	
26- 0100-3.0	
27- 0500-3.0	
28- 0300-3.0	
29- 1300-3.5	
30- 0600-3.0	
31- 0400-3.0	
32- 0100-2.5	
34- 0400-3.0	
35- 0400-3.0	
37- 0400-3.0	
39- 1000-3.0	
40- 0500-2.5	
41- 0400-2.5	
42- 2000-3.5	
43- 0500-3.0	
44- 3600-3.5	
45- 0300-3.0	
46- 0200-3.0	
47- 0200-3.0	
48- 0100-2.5	
90- 0900-3.5	

NOSC LA POSTA Np 2.0 CM

NO DATA

E EQUIPMENT W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

E EQUIPMENT W

---- UT Sp Ant. Temp. Unit 100° K

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E W

Levels 0 μT

± 50

±100

±200

2307 UT

Sp

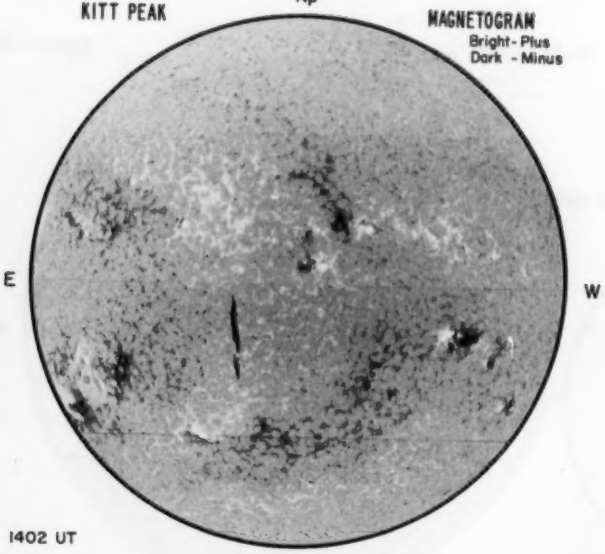
61 Aug 80

AUGUST 9, 1980 (P = 13.95, B_o = 6.34, L_o = 267.25)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

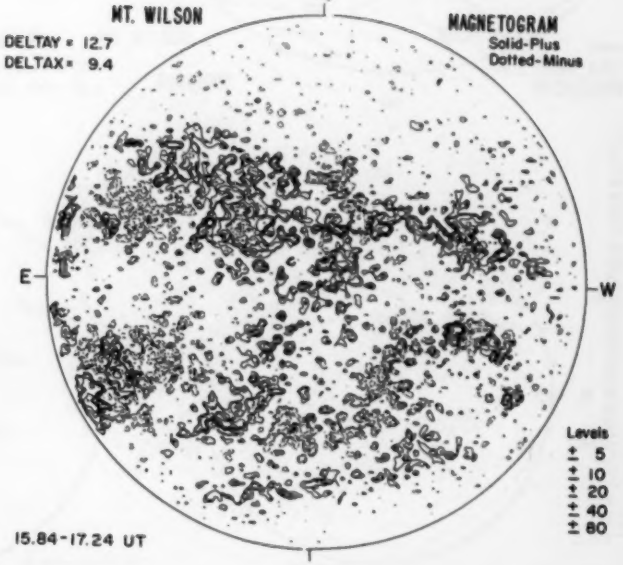
1402 UT

Sp

Sp
Np

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.4



E W

Levels
± 5
± 10
± 20
± 40
± 80

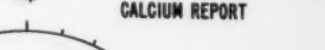
15.84-17.24 UT

Sp

69

BOULDER Np Hα

BOULDER Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT



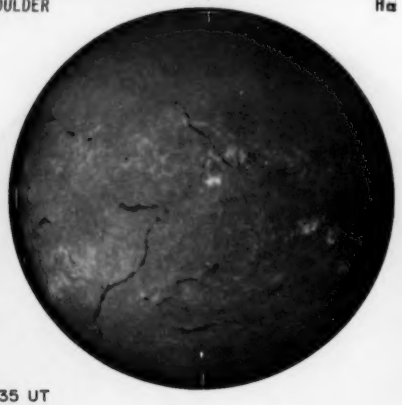
Sp

Sp

BOULDER

Np

Hα



E W

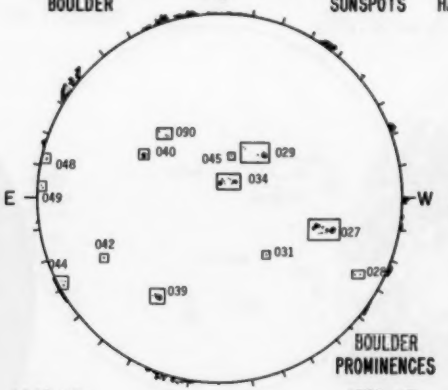
1635 UT

Sp

BOULDER

Np

SUNSPOTS



E W

1445 UT

Sp

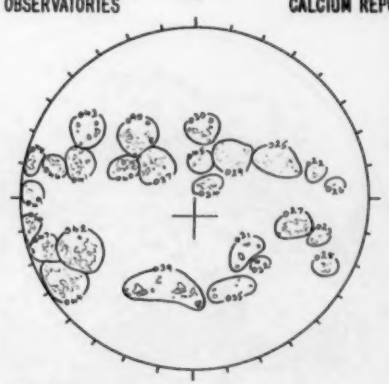
BOULDER PROMINENCES

1635 UT

HALE OBSERVATORIES

Np

CALCIUM REPORT



E W

1701 UT

Sp

FAIR	JA
22-	0100-3.0
23-	0100-3.0
25-	0800-3.0
26-	0100-3.0
27-	0900-3.0
28-	0400-2.5
29-	0900-3.0
30-	0400-3.0
31-	0200-3.0
32-	0100-2.5
34-	0400-3.5
35-	0100-3.0
37-	0700-3.0
39-	1200-3.0
40-	0700-3.0
41-	0500-3.0
42-	2200-3.0
43-	0300-3.0
44-	4400-3.5
45-	0300-3.0
46-	0400-3.0
47-	0600-3.0
48-	0800-3.5
49-	0300-2.5
50-	0300-2.5
90-	0900-3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

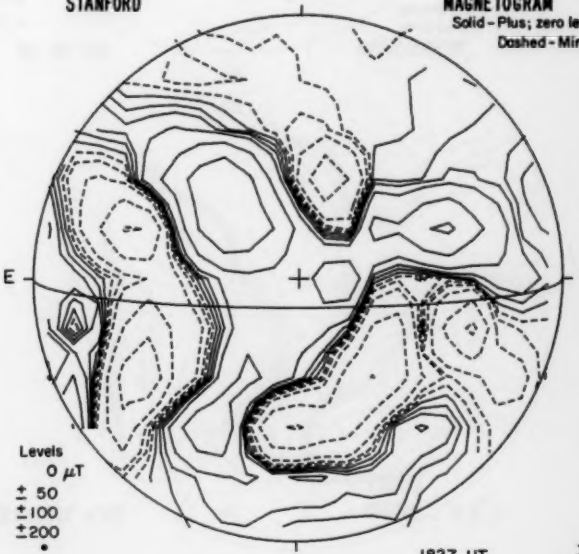
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1827 UT

Sp

63

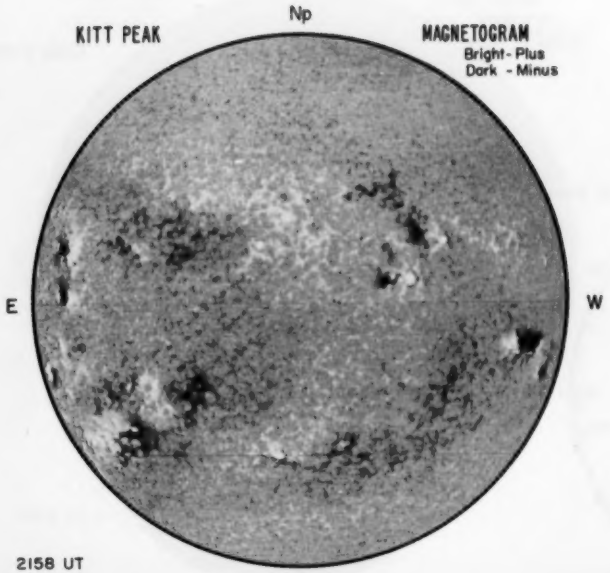
Aug 80

AUGUST 10, 1980 (P = 14.31, B_o = 6.40, L_o = 254.02)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

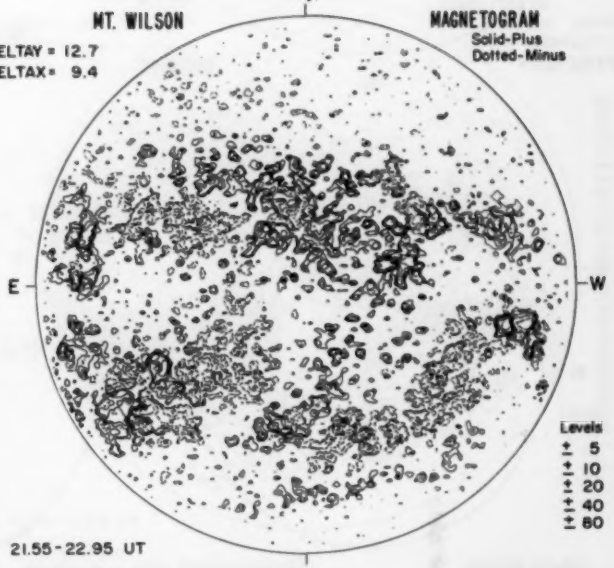
2158 UT

Sp

Sp
Np

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.4



E W

Levels
± 5
± 10
± 20
± 40
± 80

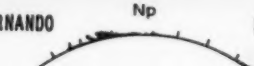
21.55-22.95 UT

Sp

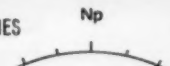
10

BOULDER Np Hα

SAN FERNANDO Np



SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT



2158 UT

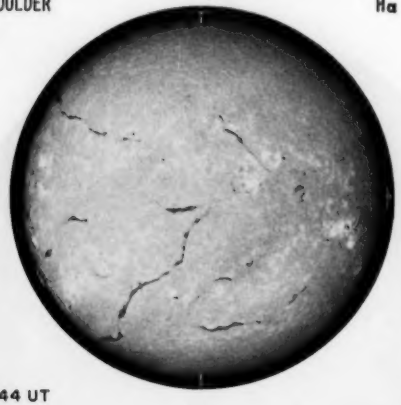
Sp

21.55-22.95 UT

Sp

BOULDER

Np



E W

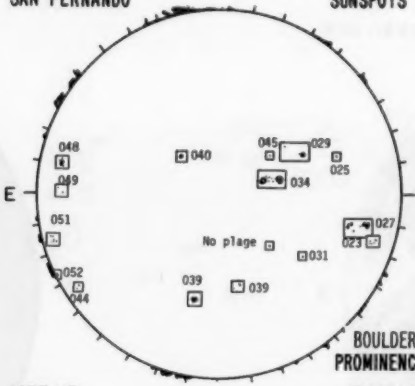
1344 UT

Sp

Hα

SAN FERNANDO

Np



E W

1435 UT

Sp

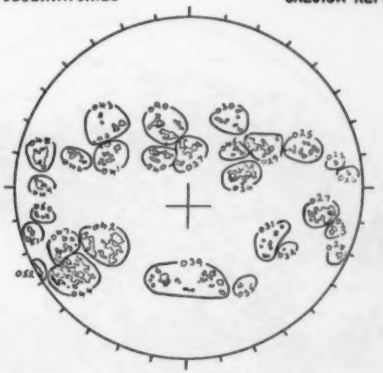
SUNSPOTS

BOULDER PROMINENCES

1344 UT

HALE OBSERVATORIES

Np



E W

1701 UT

Sp

CALCIUM REPORT

	FAIR	JA
22-	0100-2.5	
23-	0200-2.5	
25-	0500-3.0	
26-	0100-2.5	
27-	1500-3.0	
28-	0300-2.5	
29-	0900-3.5	
30-	0300-3.0	
31-	0300-2.5	
34-	1000-3.0	
35-	0100-3.0	
37-	0600-3.0	
39-	0500-3.0	
40-	0400-3.0	
41-	0600-2.5	
42-	1700-3.5	
43-	0400-3.0	
44-	3500-3.5	
45-	0200-3.0	
46-	0300-3.0	
47-	0700-3.0	
48-	1100-3.5	
49-	0400-3.5	
50-	0400-3.0	
51-	0200-3.0	
52-	0400-3.5	
90-	0800-3.0	

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

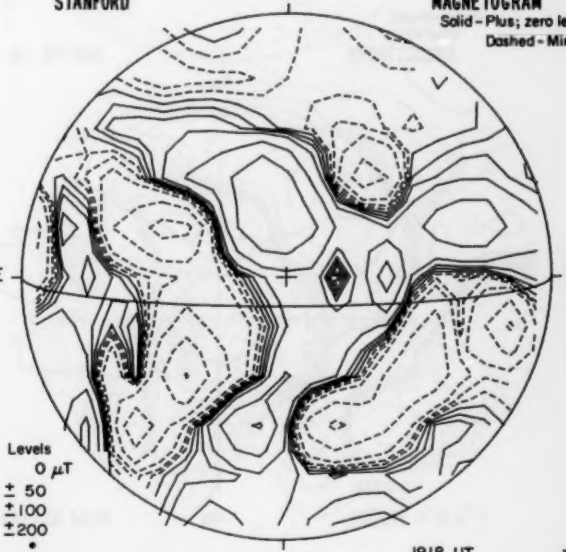
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1918 UT

Sp

65

Aug 80

AUGUST 11, 1980 (P = 14.68, B_o = 6.46, L_o = 240.80)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å

E

W

1745 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1907 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.7
DELTAX = 9.4

E

W

Levels
± 5
± 10
± 20
± 40
± 80

16.84 - 18.37 UT

Sp

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

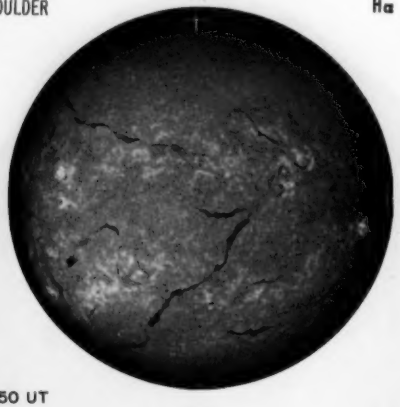
1907 UT

Sp

Np

BOULDER

Hα



E W

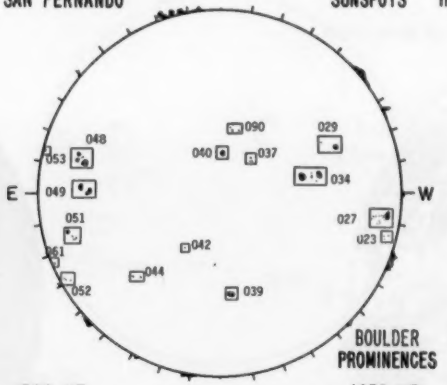
1450 UT

Sp

Np

SAN FERNANDO

SUNSPOTS



E W

1500 UT

Sp

BOULDER PROMINENCES

1450 UT

Np

HALE OBSERVATORIES

CALCIUM REPORT

E W

1702 UT

Sp

FAIR | JA

22- 0100-2.5
23- 0200-3.0
25- 0400-2.5
27- 3000-3.0
29- 1500-3.5
30- 0600-3.0
31- 0400-2.5
34- 1000-3.0
35- 0100-2.5
37- 0700-2.5
39- 1200-3.0
40- 0500-2.5
41- 0400-2.5
42- 1900-3.0
43- 0400-2.0
44- 5000-3.5
45- 0400-2.5
46- 0400-2.5
47- 0600-3.0
48- 1900-3.5
49- 0900-3.5
50- 0200-3.0
51- 0400-2.5
52- 2800-3.5
53- 0100-3.0
54- 1600-2.5
56- 0400-3.0
90- 1300-3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E EQUIPMENT W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E EQUIPMENT W

---- UT

Sp

Ant. Temp. Unit 100° K

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E W

Levels

0 μT

± 50

±100

±200

1848 UT

Sp

67

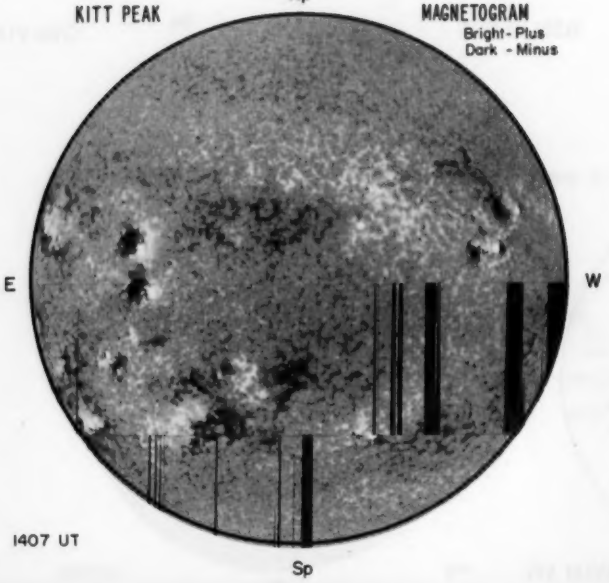
Aug 80

AUGUST 12, 1980 (P = 15.03, B_o = 6.51, L_o = 227.58)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

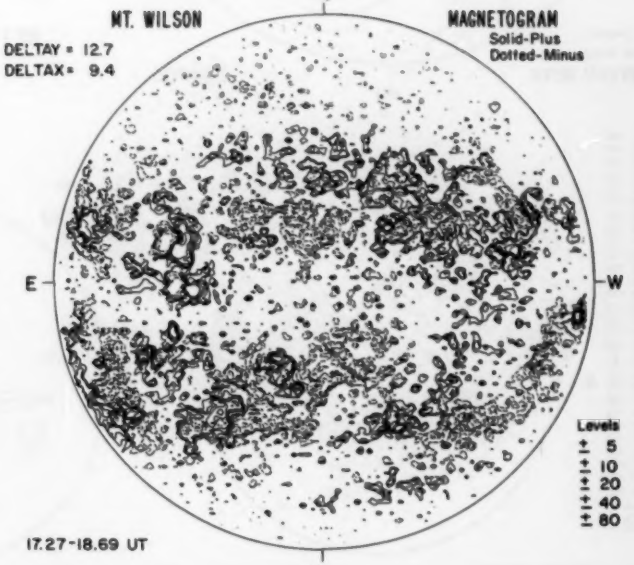
E NO DATA 12-14 AUG W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



1407 UT

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.4



17.27-18.69 UT

Sp

12
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

Sp

Sp

12

BOULDER

Np

Hα

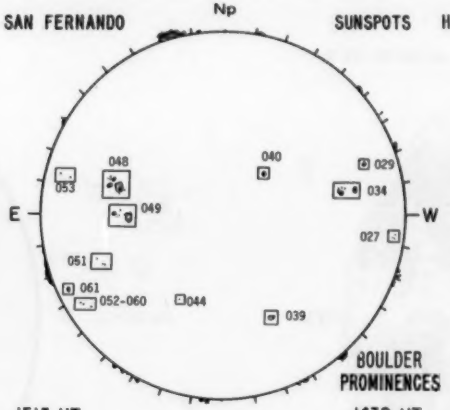
E W

1439 UT

Sp

SAN FERNANDO

Np



E W

1515 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

1439 UT

HALE OBSERVATORIES

Np

E W

1649 UT

Sp

CALCIUM REPORT

GOOD	JA
25- 0300-2.5	
27- 1000-3.5	
29- 0600-3.5	
30- 0500-3.0	
34- 1100-3.0	
37- 0900-3.0	
39- 1300-3.0	
40- 0700-3.0	
41- 0700-3.0	
42- 2200-3.5	
43- 0400-3.0	
44- 4400-4.0	
45- 0300-2.5	
47- 0400-3.0	
48- 1500-4.0	
49- 1100-4.0	
50- 0300-3.0	
51- 0400-3.0	
52- 0900-3.5	
53- 1000-3.5	
54- 1100-3.0	
55- 0200-2.5	
56- 0300-3.0	
59- 0200-2.5	
60- 0500-3.5	
61- 1000-3.5	
90- 1200-3.5	

NOSC LA POSTA

Np

2.0 CM

NO DATA

E W

EQUIPMENT

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E W

EQUIPMENT

---- UT

Sp

Ant. Temp. Unit 100° K

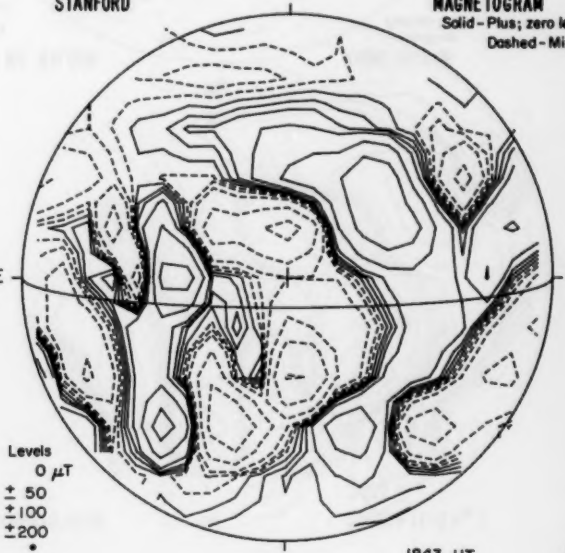
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1843 UT

Sp

69

Aug 80

AUGUST 13, 1980 (P=15.38, B_o=6.56, L_o=214.37)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright-Plus
Dark - Minus

NO DATA

E W

Sp

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.4

E W

Levels
± 5
± 10
± 20
± 40
± 80

18.38 - 19.86 UT DATA INCOMPLETE

Sp

13
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

Sp

18.38 - 19.86 UT

Sp

DATA INCOMPLETE

13

BOULDER

Np

E W

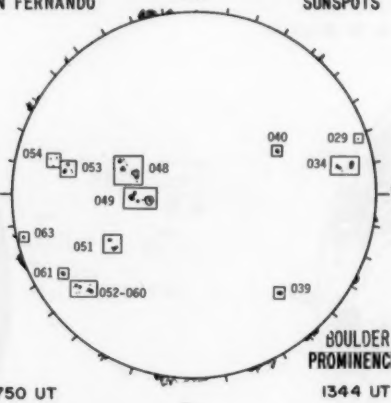
1344 UT

Sp

Hα

SAN FERNANDO

Np



E W

1750 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

1344 UT

HALE OBSERVATORIES

Np

E W

1631 UT

Sp

CALCIUM REPORT

GOOD	JA
25-	0200-2.5
29-	0600-3.5
30-	0300-2.5
34-	0800-3.0
37-	0400-3.0
39-	0600-2.5
40-	0300-3.0
41-	0500-3.0
42-	1900-3.5
43-	0200-3.0
44-	3400-3.5
45-	0200-2.5
46-	0300-2.5
47-	0400-3.5
48-	1500-4.0
49-	1200-4.0
50-	0200-3.0
51-	0700-3.0
52-	2000-3.5
53-	0800-4.0
54-	1500-4.0
55-	0300-3.0
56-	0200-3.0
57-	0900-3.0
58-	0200-3.0
59-	0200-3.0
60-	0600-3.5
61-	1300-3.0
63-	0500-3.0
68-	0600-3.0
90-	1000-3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E EQUIPMENT W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E EQUIPMENT W

---- UT

Sp

Ant. Temp. Unit 100° K

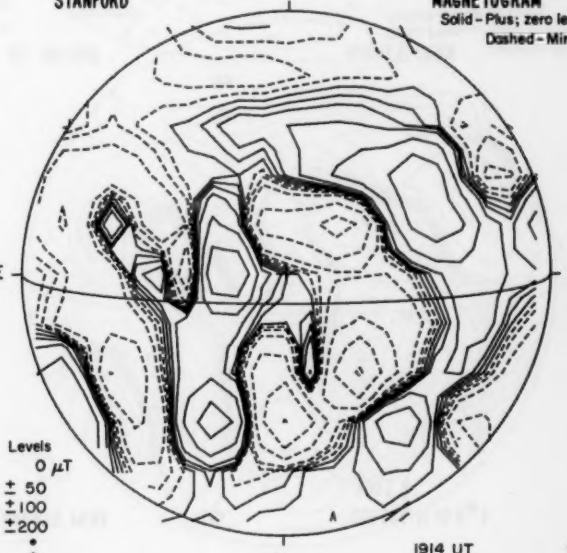
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1914 UT

Sp

71

Aug 80

AUGUST 14, 1980 (P = 15.73, B_o = 6.61, L_o = 201.15)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

E W

1950 UT

Sp

Sp
Np
MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus
DELTAY = 12.7
DELTAX = 9.5

E W

Levels
± 5
± 10
± 20
± 40
± 80

17.29 - 18.78 UT

Sp

14

BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1950 UT

Sp

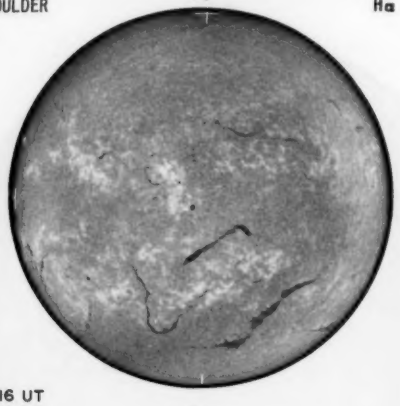
17.29-18.78 UT

Sp

14

BOULDER

Np



E W

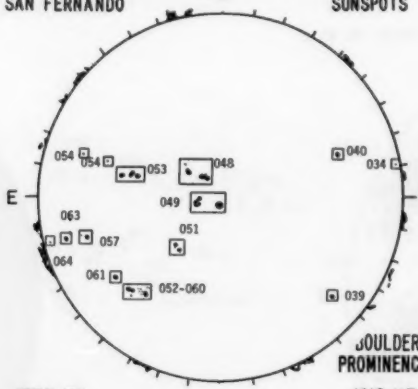
1416 UT

Sp

Hα

SAN FERNANDO

Np



E W

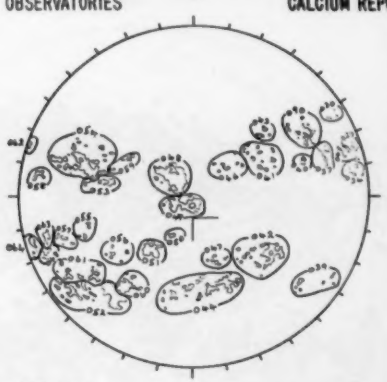
1730 UT

Sp

SUNSPOTS

HALE OBSERVATORIES

Np



E W

1653 UT

Sp

CALCIUM REPORT

	GOOD	JA
29-	0500	3.5
34-	0600	3.5
37-	0700	3.0
39-	0400	3.0
40-	0200	3.0
41-	0700	3.0
42-	1800	3.0
43-	0200	3.0
44-	2500	3.5
46-	0300	3.0
47-	0300	3.0
48-	2200	4.0
49-	1300	3.5
50-	0100	3.0
51-	0900	3.0
52-	3500	3.5
53-	0700	4.0
54-	2900	3.5
55-	0200	3.0
56-	0300	3.0
57-	0400	3.0
58-	0400	3.5
59-	0300	3.0
60-	1200	3.5
61-	1000	3.5
62-	0200	4.0
63-	0500	3.5
64-	0900	3.0
68-	0500	3.0
90-	1100	3.0

BOULDER PROMINENCES

1416 UT

NOSC LA POSTA Np 2.0 CM

NO DATA

E EQUIPMENT W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

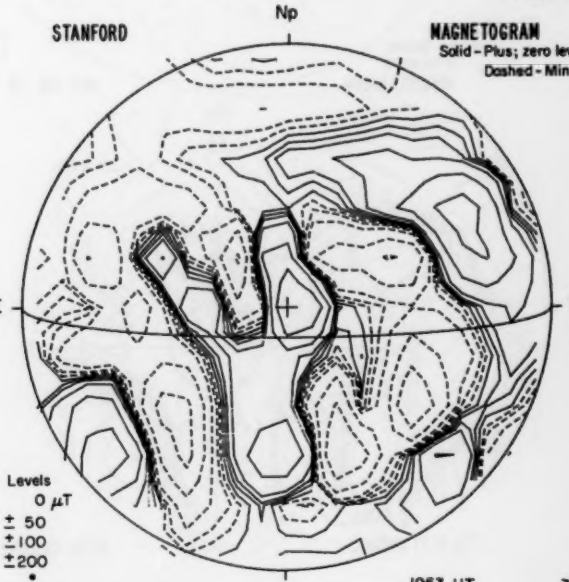
NO DATA

E EQUIPMENT W

---- UT Sp Ant. Temp. Unit 100° K

STANFORD

Np



MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E W

Levels

0 μT

± 50

±100

±200

1953 UT

Sp

73 Aug 80

AUGUST 15, 1980 (P = 16.07, B_o = 6.66, L_o = 187.93)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å

E

W

1834 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1408 UT

Sp

MT. WILSON

Np

DELTAY = 12.7
DELTAX = 9.4

MAGNETOGRAM
Solid - Plus
Dotted - Minus

E

W

Levels
± 5
± 10
± 20
± 40
± 80

18.36 - 19.96 UT

Sp

15

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

1408 UT

Sp

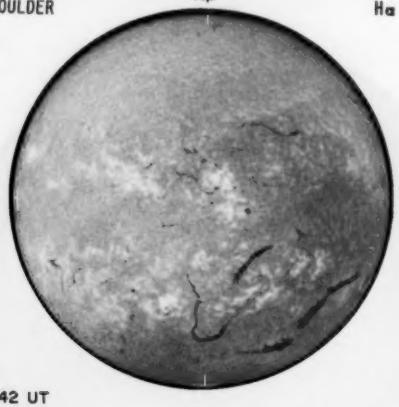
18.36-19.96 UT

Sp

15

BOULDER

Np



E W

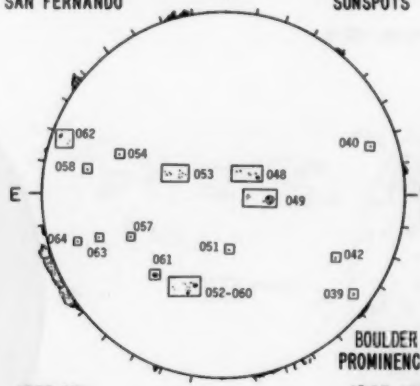
1842 UT

Sp

Hα

SAN FERNANDO

Np



E W

1920 UT

Sp

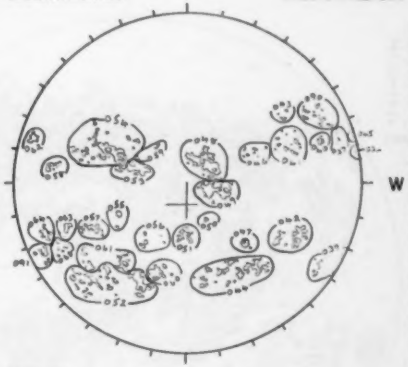
SUNSPOTS

BOULDER PROMINENCES

1842 UT

HALE OBSERVATORIES

Np



E W

1626 UT

Sp

CALCIUM REPORT

	GOOD	JA
34-	0300-3.5	
37-	0400-3.0	
39-	0400-3.0	
40-	0300-3.0	
41-	0500-3.0	
42-	1100-3.5	
43-	0200-3.0	
44-	2300-3.5	
45-	0200-2.5	
46-	0200-3.0	
47-	0300-3.0	
48-	1500-4.0	
49-	1600-4.0	
50-	0100-3.0	
51-	0700-3.0	
52-	3400-4.0	
53-	1100-3.5	
54-	2300-3.5	
55-	0200-3.5	
56-	0300-3.0	
57-	0500-3.0	
58-	0500-4.0	
59-	0200-3.0	
60-	0900-4.5	
61-	1100-3.0	
62-	0600-4.5	
63-	0400-3.5	
64-	0500-3.5	
68-	0300-3.0	
90-	0700-3.0	
91-	0500-3.0	

NOSC LA POSTA

Np

2.0 CM

NO DATA

E EQUIPMENT W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E EQUIPMENT W

---- UT

Sp

Ant. Temp. Unit 100° K

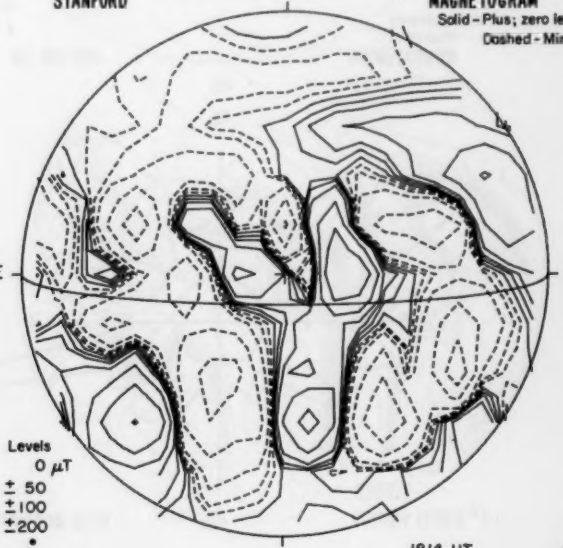
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1814 UT

Sp

75

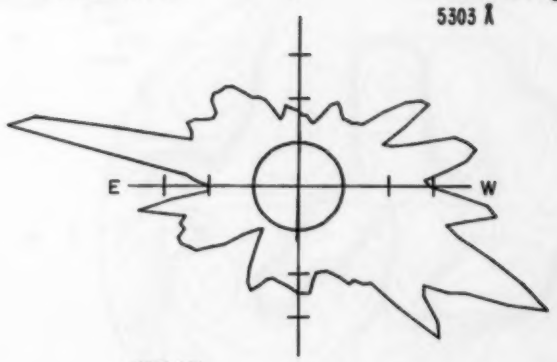
Aug 80

AUGUST 16, 1980 (P=16.41, B_o=6.71, L_o=174.71)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



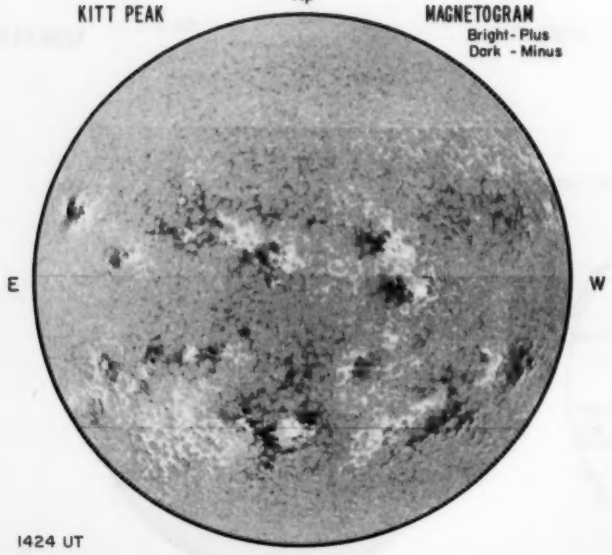
1959 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1424 UT

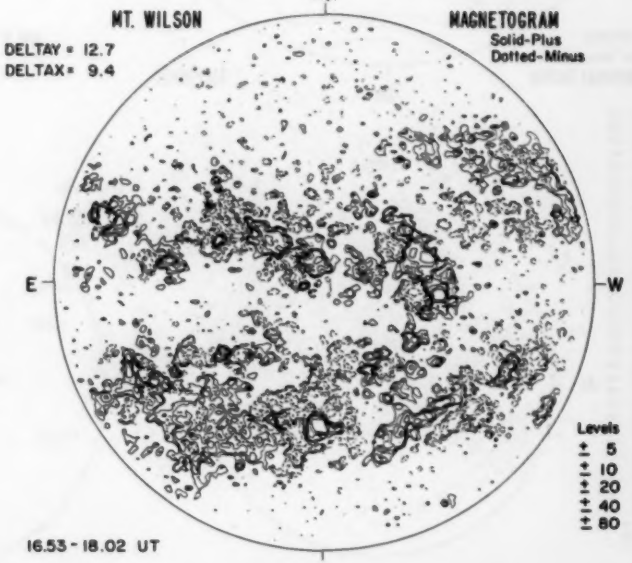
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.4



16.53 - 18.02 UT

Sp

16

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

1424 UT

Sp

16.53 - 18.02 UT

Sp

16

BOULDER

Np

E W

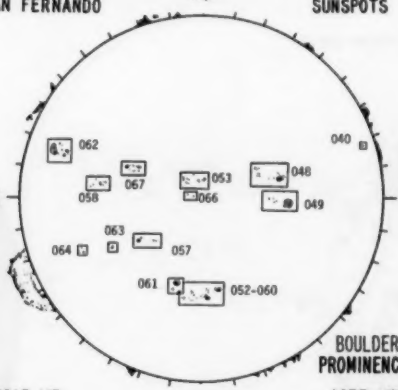
1437 UT

Sp

Hα

SAN FERNANDO

Np



E W

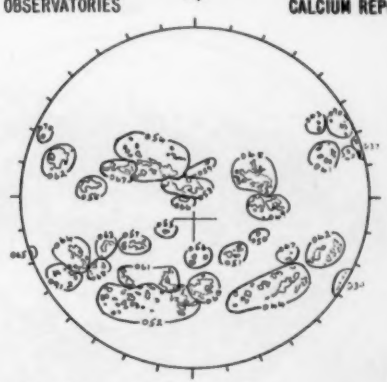
1915 UT

Sp

SUNSPOTS

HALE OBSERVATORIES

Np



E W

1916 UT

Sp

CALCIUM REPORT

GOOD	JA
37- 0300-2.5	
39- 0400-2.5	
40- 0100-2.5	
41- 0500-2.5	
42- 1100-3.0	
43- 0200-2.5	
44- 2700-3.0	
47- 0100-2.5	
48- 1900-3.5	
49- 1300-3.0	
50- 0100-2.5	
51- 0400-3.0	
52- 3400-3.5	
53- 1400-3.5	
54- 1700-3.5	
55- 0100-3.5	
56- 0300-3.0	
57- 0500-3.0	
58- 0800-3.5	
59- 0100-3.0	
60- 1300-3.0	
61- 1100-3.0	
62- 2000-4.0	
63- 0300-3.5	
64- 1200-3.0	
66- 0200-3.0	
67- 0700-3.5	
68- 0200-3.0	
90- 0400-2.5	
91- 0500-3.0	

BOULDER PROMINENCES

1437 UT

NOSC LA POSTA Np 2.0 CM

NO DATA

E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

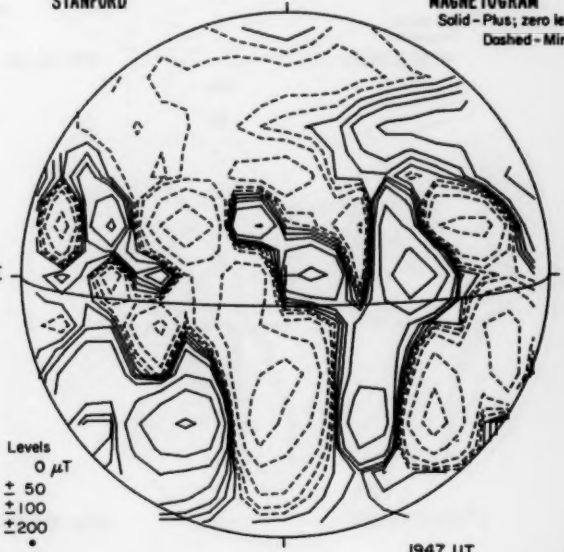
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1947 UT

Sp

77

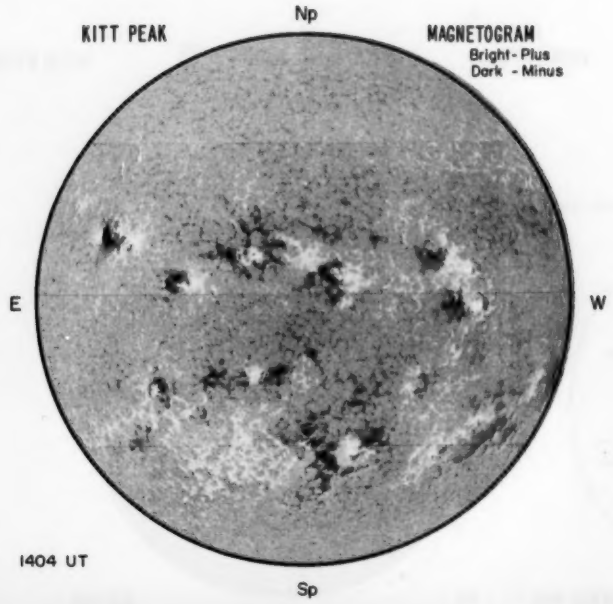
Aug 80

AUGUST 17, 1980 (P = 16.74, B_o = 6.75 L_o = 161.49)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

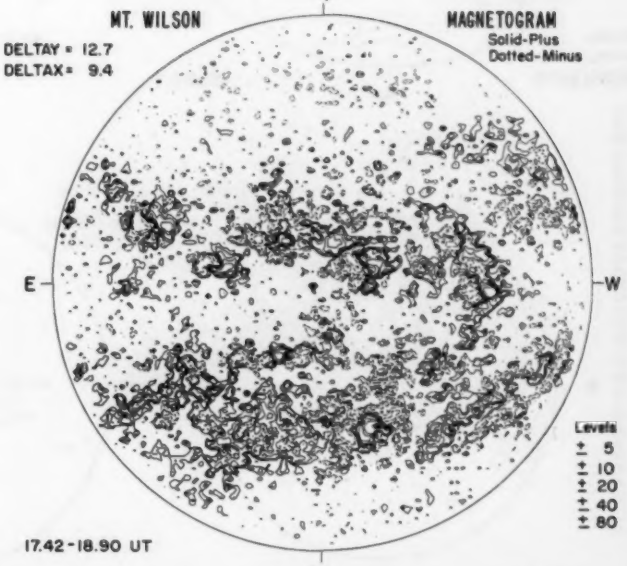
E NO DATA 17-19 AUG W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



1404 UT

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.4



17.42 - 18.90 UT
Sp

17
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1404 UT

Sp

17:42-18:90 UT

Sp

17

BOULDER

Np

E W

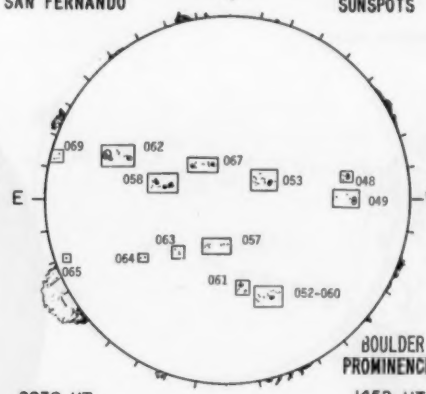
1452 UT

Sp

Hα

SAN FERNANDO

Np



E W

2030 UT

Sp

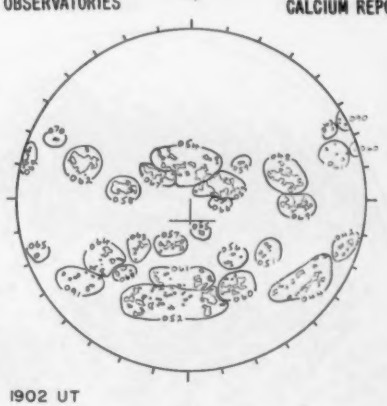
SUNSPOTS

BOULDER PROMINENCES

1452 UT

HALE OBSERVATORIES

Np



E W

1902 UT

Sp

CALCIUM REPORT

	GOOD	JA
41-	0200	2.5
42-	0600	3.0
44-	2000	3.0
48-	1600	3.5
49-	1000	3.5
51-	0300	3.0
52-	3200	3.5
53-	1700	3.5
54-	2000	3.5
55-	0100	3.5
56-	0200	3.0
57-	0600	3.5
58-	1000	4.5
59-	0100	3.0
60-	1000	3.0
61-	1000	3.0
62-	1900	4.0
63-	0300	3.0
64-	0600	3.5
65-	0100	3.0
66-	0200	3.0
67-	0900	2.5
68-	0200	3.0
69-	0700	4.0
70-	0100	2.5
91-	0500	2.5

NOSC LA POSTA

Np

2.0 CM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

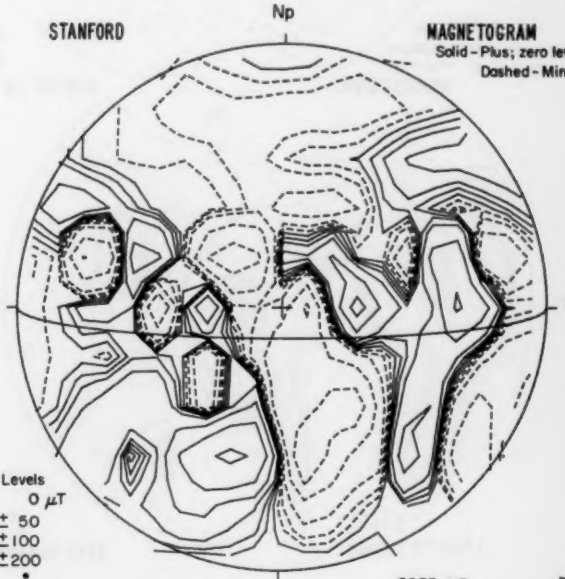
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

2053 UT

Sp

79

Aug 80

AUGUST 18, 1980 (P = 17.07, B_o = 6.80, L_o = 148.28)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

E W

1548 UT

Sp

Sp
Np
MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus
DELTAY = 12.7
DELTAX = 9.8

E W

Levels
± 5
± 10
± 20
± 40
± 80

17.37 - 18.38 UT

Sp

18
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1548 UT

Sp

17.37-18.38 UT

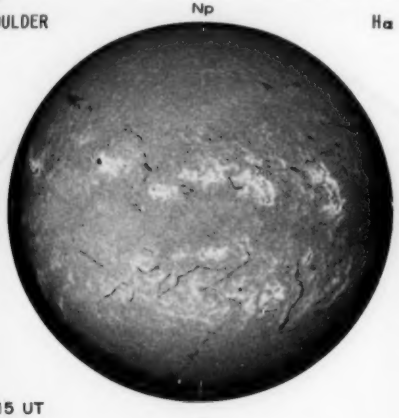
Sp

18

BOULDER

Np

Hα



E

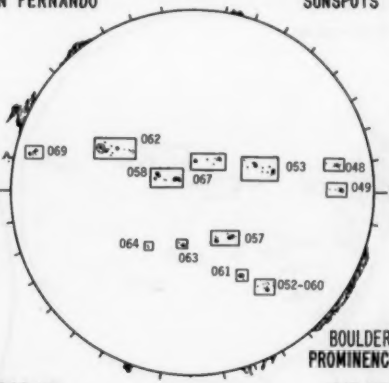
W

1415 UT

Sp

SAN FERNANDO

Np



E

W

2040 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

1415 UT

HALE OBSERVATORIES

Np

E

W

1752 UT

Sp

CALCIUM REPORT

	GOOD	JA
44-	1300-	2.5
48-	2000-	3.0
49-	0800-	3.0
52-	2200-	2.5
53-	2100-	3.0
54-	1200-	3.0
55-	0100-	2.5
56-	0200-	3.0
57-	1000-	3.0
58-	1000-	3.0
59-	0100-	2.5
60-	0100-	2.5
61-	0900-	3.0
62-	2000-	3.0
63-	0200-	3.0
64-	0300-	3.0
65-	0100-	2.5
66-	0200-	3.0
67-	0500-	3.0
69-	1000-	3.5
70-	0200-	2.5
91-	0300-	3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

EQUIPMENT

W

---- UT

Sp

Ant. Temp. Unit 100° K

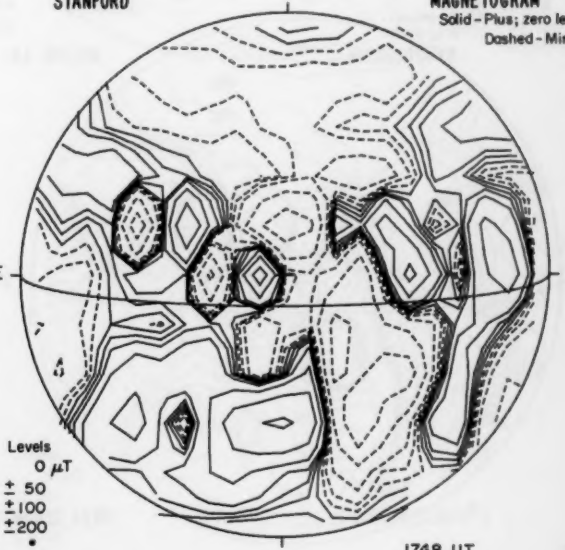
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E

W

Levels

0 μT

± 50

±100

±200

1748 UT

Sp

81

Aug 80

AUGUST 19, 1980 (P = 17.39, B_o = 6.84, L_o = 135.06)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

NO DATA

E W

Sp

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.6
DELTAX = 9.4

E W

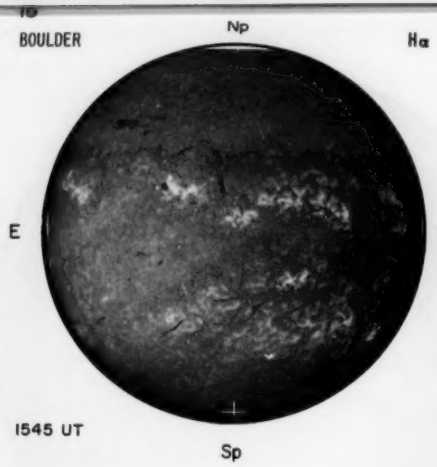
Levels
± 5
± 10
± 20
± 40
± 80

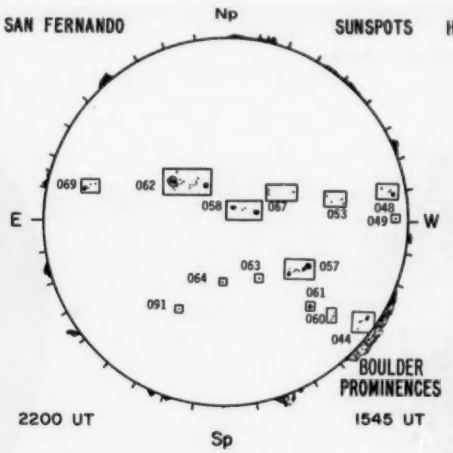
19.94 - 21.41 UT

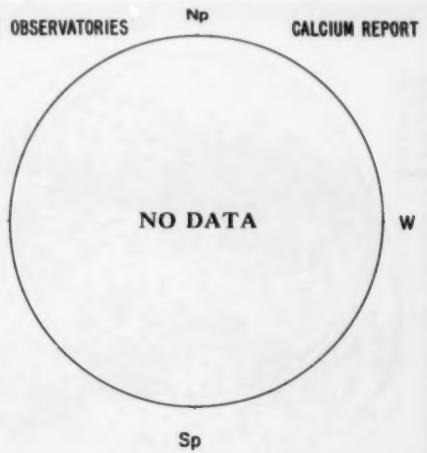
Sp

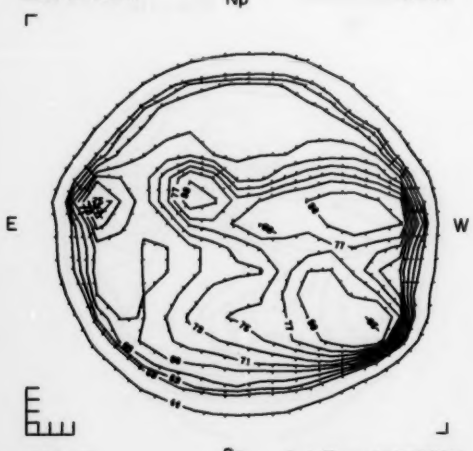
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

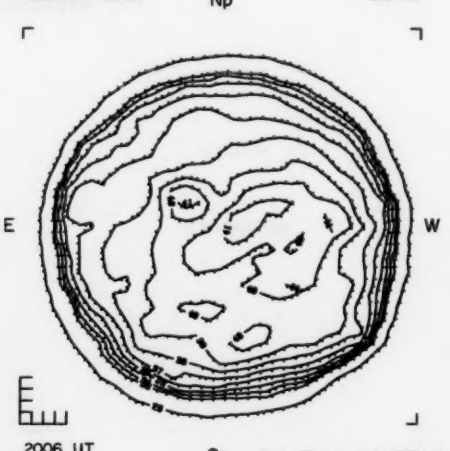
Sp
19.94 - 21.41 UT
Sp

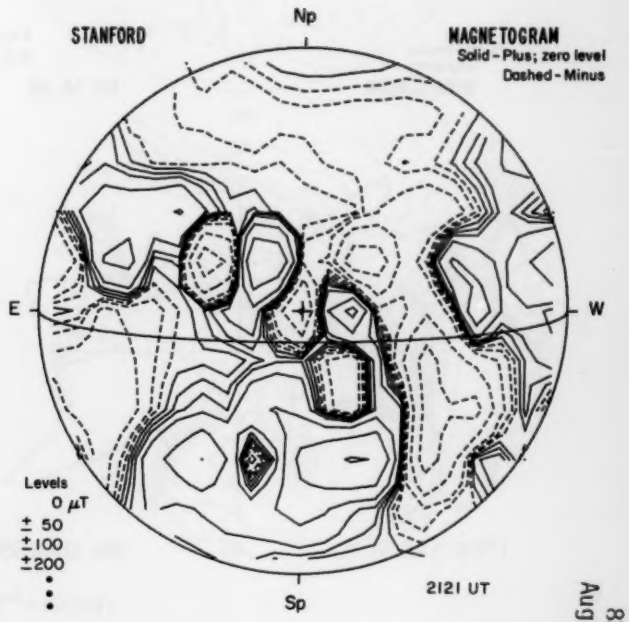

BOUDER
Np
Hα
E
W
1545 UT
Sp


SAN FERNANDO
Np
SUNSPOTS
069
062
058
067
053
048
049
E
W
063
057
064
061
091
060
044
2200 UT
Sp
BOULDER
PROMINENCES
1545 UT


HALE OBSERVATORIES
Np
CALCIUM REPORT
E
NO DATA
W
Sp


NOSC LA POSTA
Np
2.0 CM
E
W
1934 UT
Sp
Ant. Temp. Unit 100° K


NOSC LA POSTA
Np
8.6 MM
E
W
2006 UT
Sp
Ant. Temp. Unit 100° K


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2121 UT
Sp

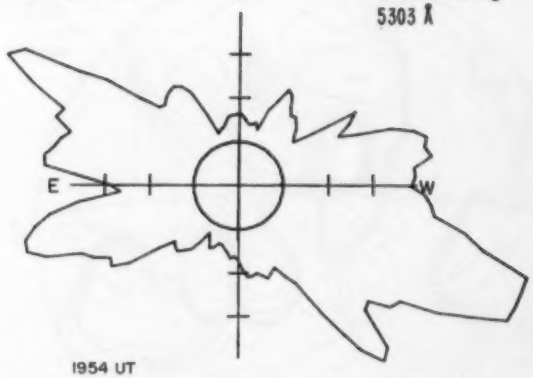
83
Aug 80

AUGUST 20, 1980 (P = 17.71, B_o = 6.88, L_o = 121.84)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



1954 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

1404 UT

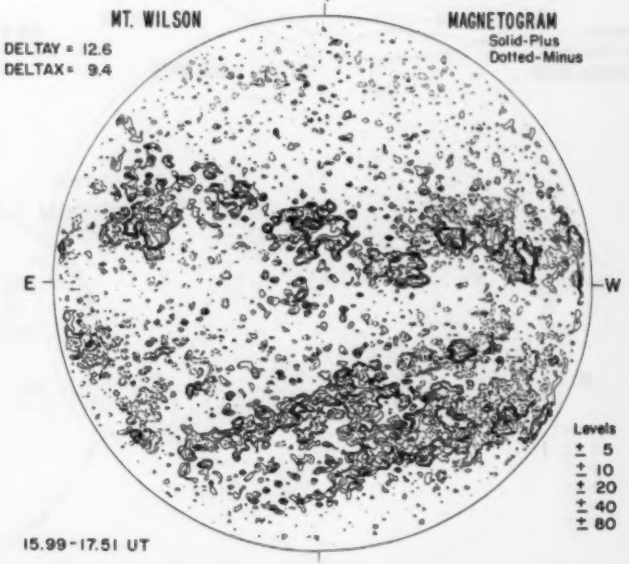
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.6
DELTAX = 9.4



15.99 - 17.51 UT

Sp

20

BOULDER

Np

Hα

BOULDER

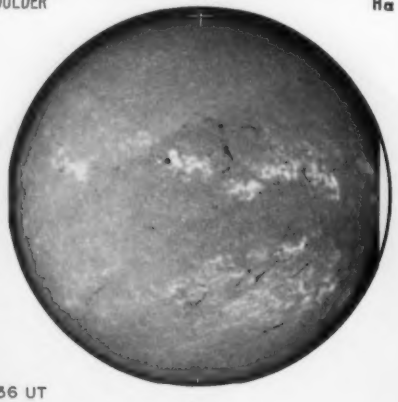
Np

SUNSPOTS HALE OBSERVATORIES

Np

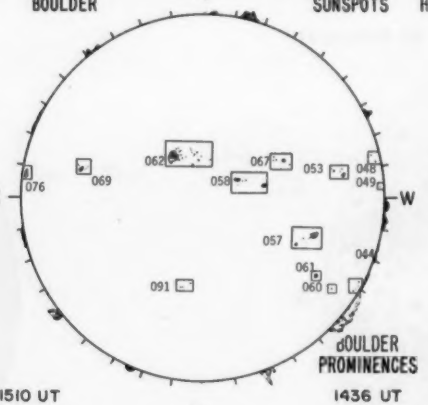
CALCIUM REPORT

BOULDER Np Hα



1436 UT

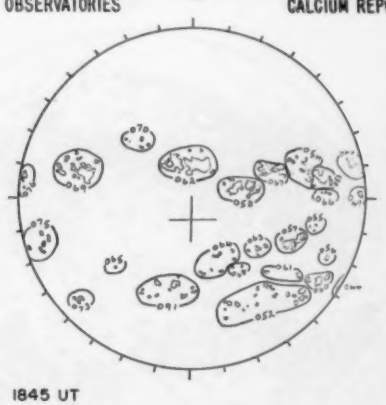
BOULDER Np SUNSPOTS



1510 UT

BOULDER PROMINENCES 1436 UT

HALE OBSERVATORIES Np

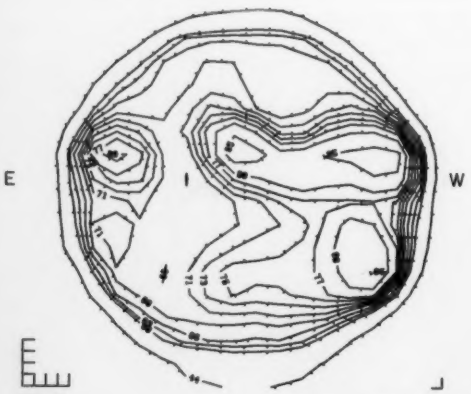


1845 UT

CALCIUM REPORT

FAIR	JA
44-	0200-2.5
48-	0600-3.0
49-	0200-3.0
53-	0800-3.0
54-	0700-3.0
55-	0100-2.5
56-	0200-2.5
57-	1000-3.0
58-	1000-3.0
60-	0100-3.0
61-	0900-2.5
62-	2000-3.5
63-	0200-2.5
64-	0300-3.0
66-	0200-3.0
67-	0500-3.0
68-	0200-2.5
69-	1000-2.5
70-	0200-2.5
73-	0200-3.0
75-	0400-2.5
76-	0400-3.0
91-	0800-3.0

NOSC LA POSTA Np 2.0 CM



2007 UT Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

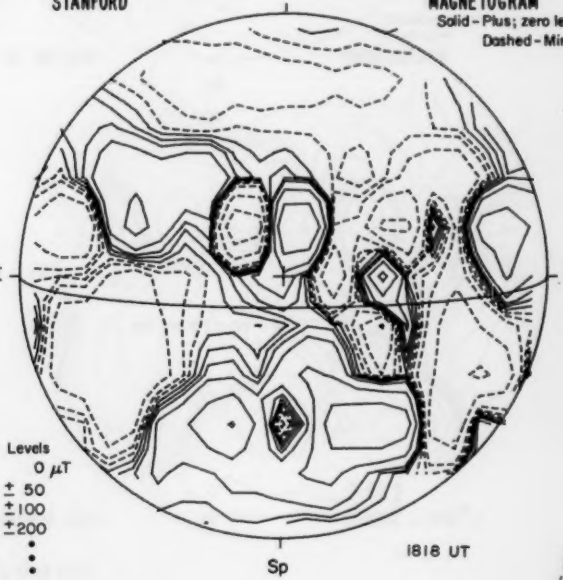
CALIBRATION

2034 UT Ant. Temp. Unit 100° K

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



Levels 0 μT

± 50

±100

±200

1818 UT

AUGUST 21, 1980 (P=18.03, B_o=6.92, L_o=108.63)

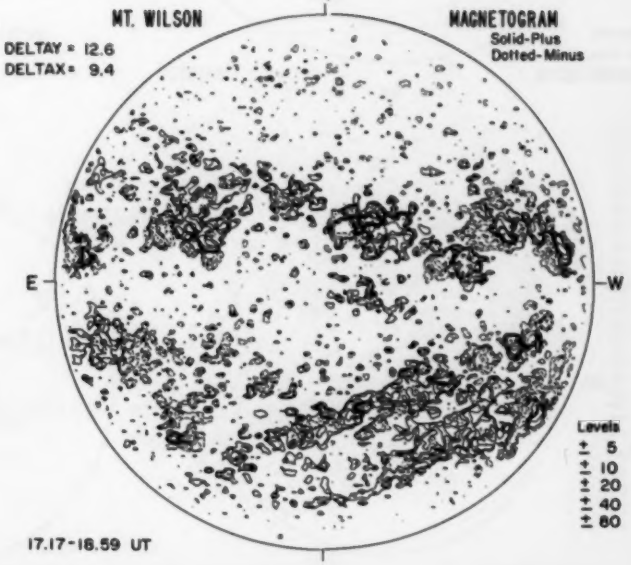
SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E NO DATA 21-22 AUG W

KITT PEAK Np MAGNETOGRAM
Bright-Plus
Dark - Minus

1413 UT

Sp
Np
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.6
DELTAX = 9.4

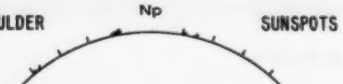


17.17-18.59 UT

Sp

21
BOULDER Np Hα

BOULDER Np SUNSPOTS HALE OBSERVATORIES



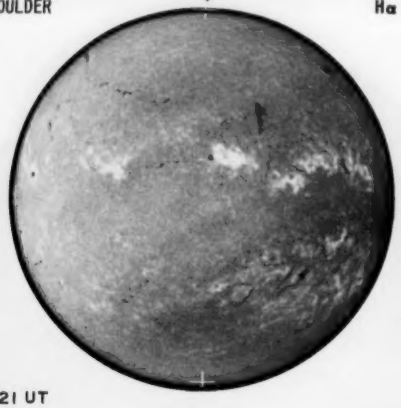
Np CALCIUM REPORT

Sp

Sp

21

BOULDER Np Hα

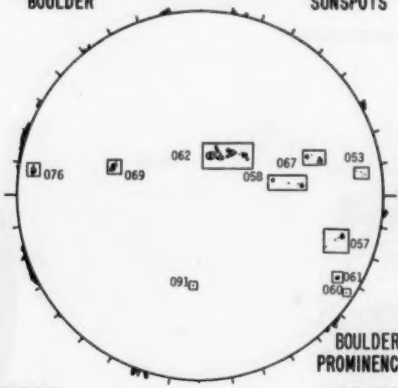


E W

1421 UT

Sp

BOULDER Np SUNSPOTS



E W

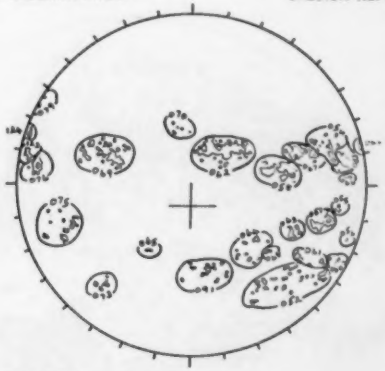
1510 UT

Sp

BOULDER PROMINENCES

1421 UT

HALE OBSERVATORIES Np CALCIUM REPORT



E W

1738 UT

Sp

GOOD	JA
48-	0300-2.5
52-	1700-3.0
53-	1100-3.5
54-	0600-3.0
55-	0100-2.5
57-	0900-3.0
58-	1400-3.5
60-	0300-3.0
61-	0400-3.5
62-	3400-3.0
63-	0300-3.0
64-	0500-3.0
65-	0100-2.5
66-	0200-3.0
67-	1100-3.0
68-	0100-3.0
69-	2000-3.5
70-	0200-2.5
73-	0300-3.0
75-	0700-3.0
76-	0700-3.5
91-	0600-3.0
23-	0900-3.5
24-	0200-3.5

NOSC LA POSTA Np 2.0 CM

NO DATA

E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

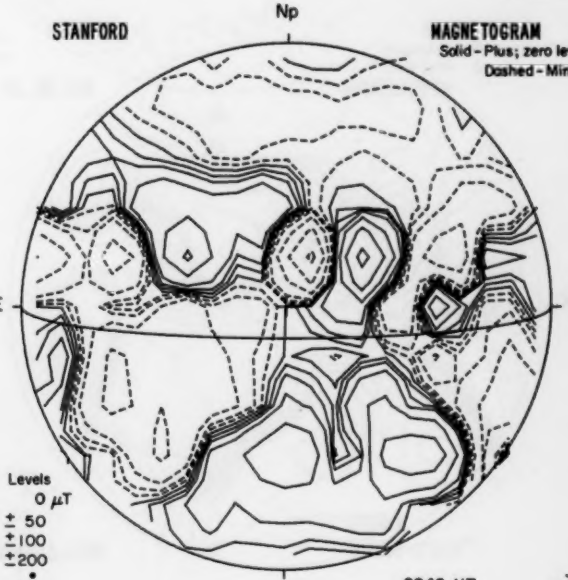
E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

•

•

•

2040 UT

Sp

87

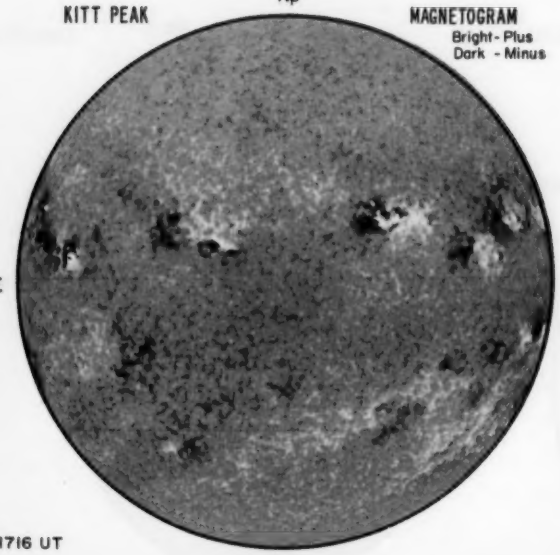
Aug 80

AUGUST 22, 1980 (P = 18.33, B_o = 6.95, L_o = 95.41)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

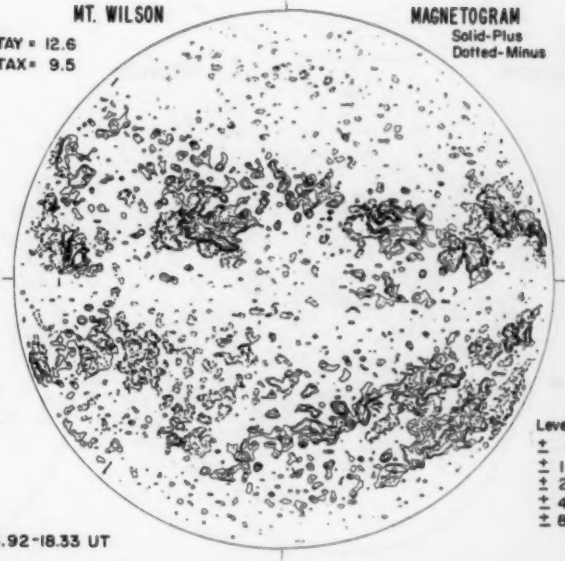
1716 UT

Sp

Sp
Np

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.5



E W

Levels
± 5
± 10
± 20
± 40
± 80

16.92-18.33 UT

Sp

22

BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

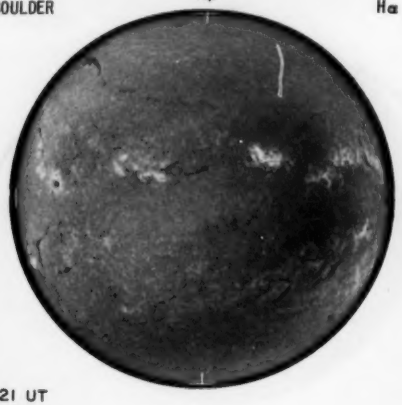
Sp

22

BOULDER

Np

Hα



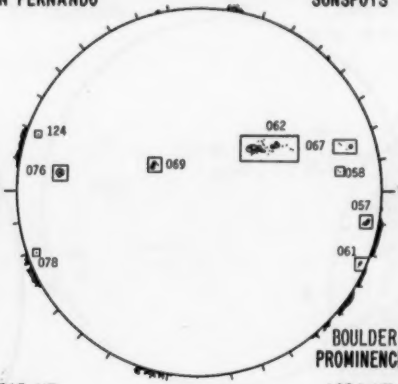
E W

1421 UT

Sp

SAN FERNANDO

Np



E W

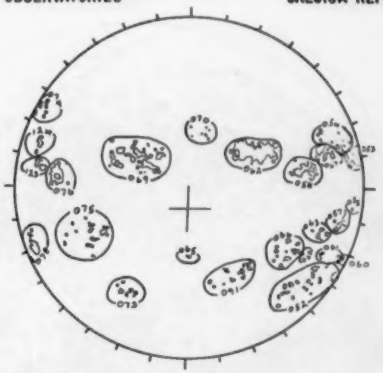
1815 UT

Sp

SUNSPOTS

HALE OBSERVATORIES

Np



E W

1741 UT

Sp

BOULDER PROMINENCES

1421 UT

CALCIUM REPORT

	GOOD	JA
52-	1300	3.0
53-	1000	3.0
54-	0800	3.0
57-	0700	2.5
58-	1100	3.0
61-	0300	3.5
62-	3800	3.0
63-	0300	3.0
64-	0700	3.0
65-	0100	3.0
67-	0800	3.0
68-	0100	3.0
69-	2700	3.0
70-	0200	3.5
73-	0300	2.5
75-	0700	3.0
76-	0900	3.5
78-	0500	3.0
91-	0500	3.5
23-	0500	3.5
24-	0400	3.5

NOSC LA POSTA

Np

2.0 CM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

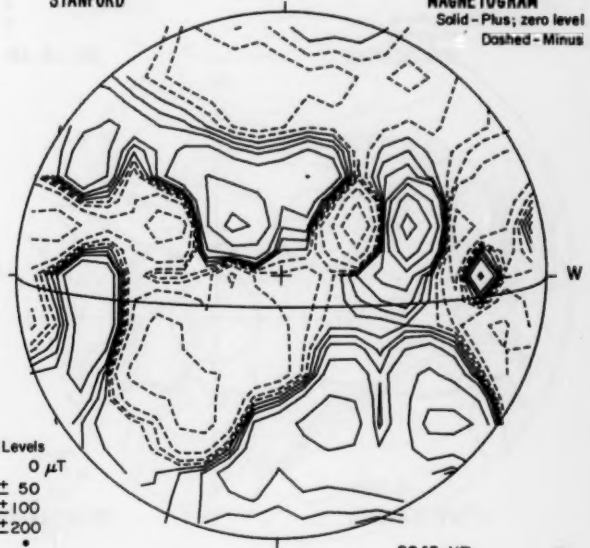
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

•

•

•

2042 UT

Sp

89

Aug 80

AUGUST 23, 1980 (P = 18.64, B_o = 6.99, L_o = 82.20)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å

E

1718 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

NO DATA

W

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.5

E

W

Levels
± 5
± 10
± 20
± 40
± 80

17.17 - 18.70 UT

Sp

23

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

Sp

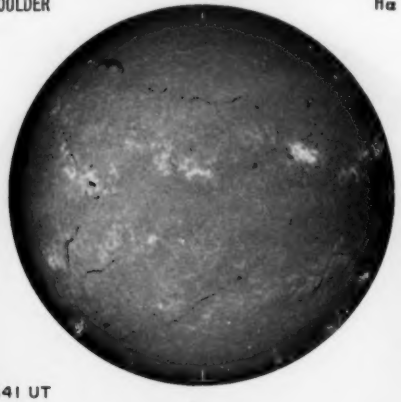
Sp

23

BOULDER

Np

Hα



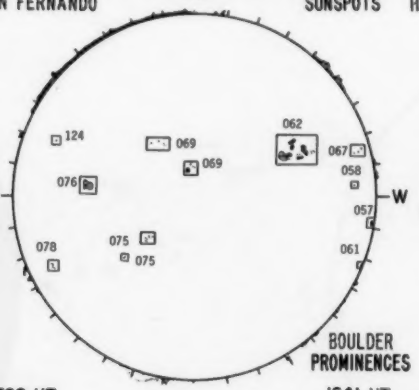
E W

1641 UT

Sp

SAN FERNANDO

Np



E W

1700 UT

Sp

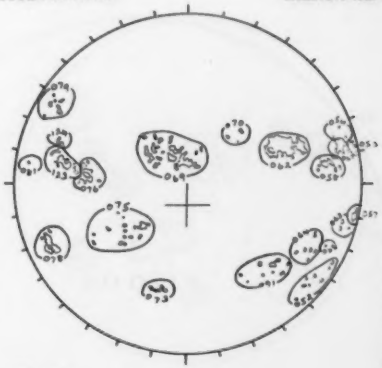
SUNSPOTS

BOULDER PROMINENCES

1641 UT

HALE OBSERVATORIES

Np



E W

1754 UT

Sp

CALCIUM REPORT

GOOD	JA

52- 0700-2.5
53- 0300-2.5
57- 0300-3.0
58- 1000-3.0
62- 3100-3.5
67- 0900-3.0
69- 2100-3.5
73- 0300-3.0
75- 0800-3.0
76- 0700-3.0
78- 0500-3.0
79- 0500-3.0
91- 0500-2.5
23- 0300-2.5
24- 0200-3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

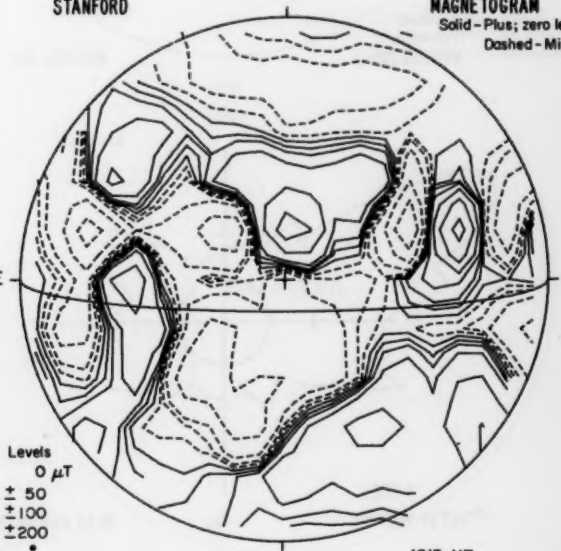
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

1813 UT

Sp

91

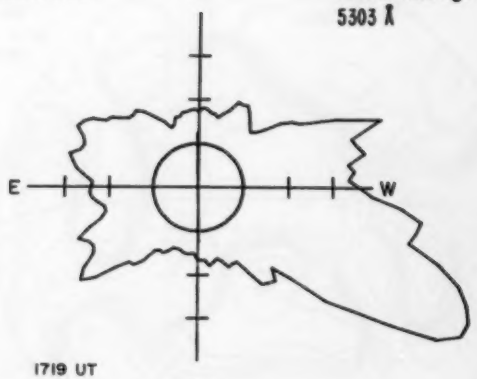
Aug 80

AUGUST 24, 1980 (P = 18.94, B_o = 7.02, L_o = 68.99)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



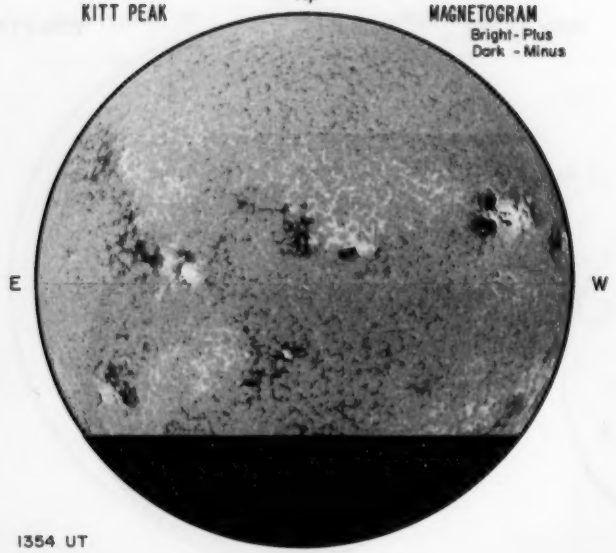
1719 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1354 UT

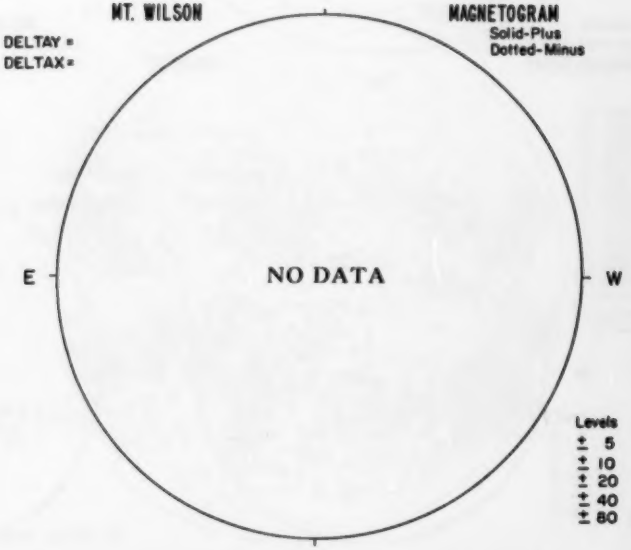
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY =
DELTAX =



Sp

24

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

Sp

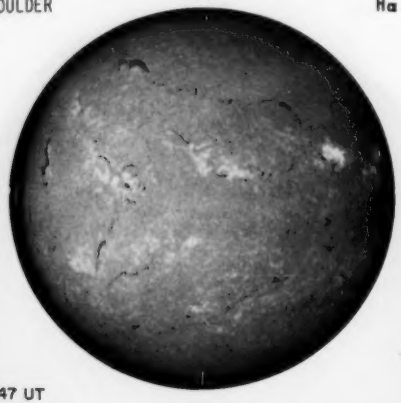
Sp

24

BOULDER

Np

Hα



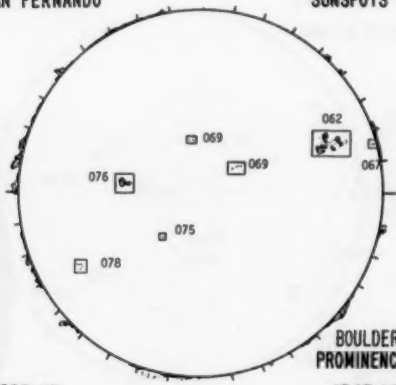
E W

1347 UT

Sp

SAN FERNANDO

Np



E W

1520 UT

Sp

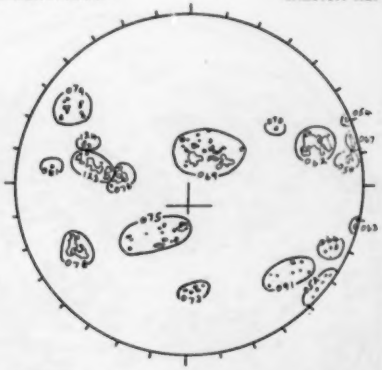
SUNSPOTS

BOULDER PROMINENCES

1347 UT

HALE OBSERVATORIES

Np



E W

1807 UT

Sp

CALCIUM REPORT

FAIR | JA

52- 0200-2.5
54- 0100-3.0
58- 0400-3.0
62- 2600-3.0
67- 0300-2.5
69- 1900-3.0
73- 0200-2.5
75- 0700-2.5
76- 0600-3.0
78- 0900-3.0
79- 0500-3.0
23- 1100-2.5
24- 0100-2.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

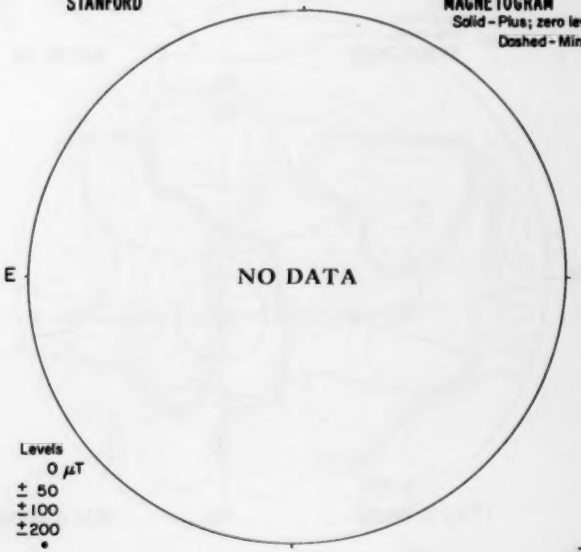
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

Sp

93

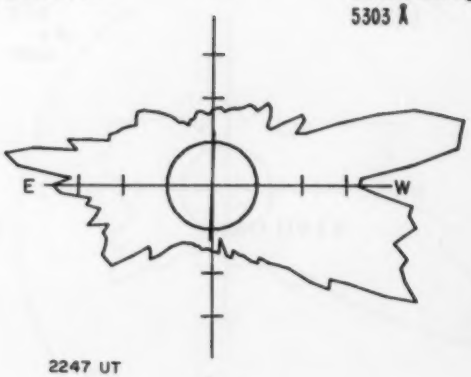
Aug 80

AUGUST 25, 1980 (P = 19.23, B_o = 7.05, L_o = 55.77)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å



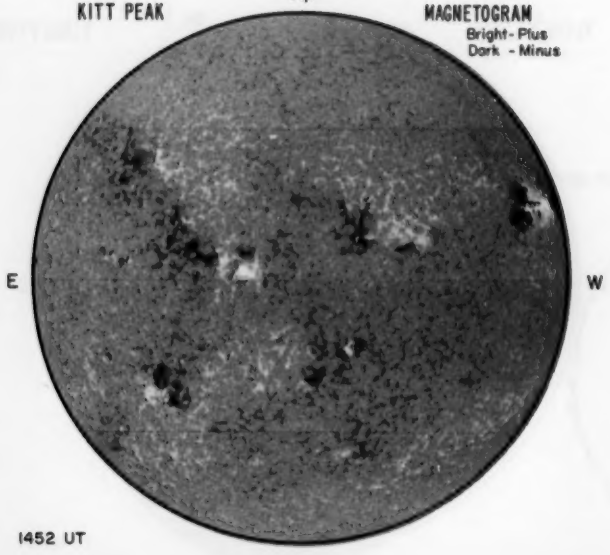
2247 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1452 UT

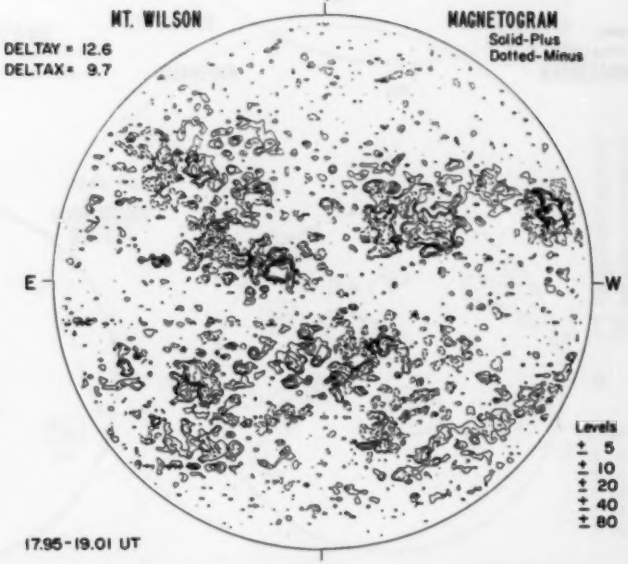
Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.7



17.95 - 19.01 UT

Sp

25

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

1452 UT

Sp

17.98-19.01 UT

Sp

25

BOULDER

Np

E W

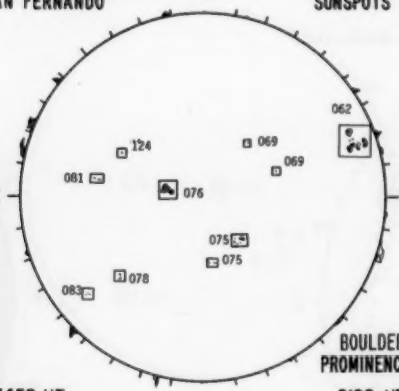
2100 UT

Sp

Hα

SAN FERNANDO

Np



E W

1450 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

2100 UT

HALE OBSERVATORIES

Np

E W

1704 UT

Sp

CALCIUM REPORT

	POOR	JA
56-	0200	3.0
62-	3100	3.5
69-	2200	3.0
73-	0200	2.5
75-	1200	2.5
76-	0600	3.0
78-	0600	3.0
79-	0800	3.0
81-	0200	3.0
23-	0900	3.0
24-	0200	3.0

NOSC LA POSTA

Np

2.0 CM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

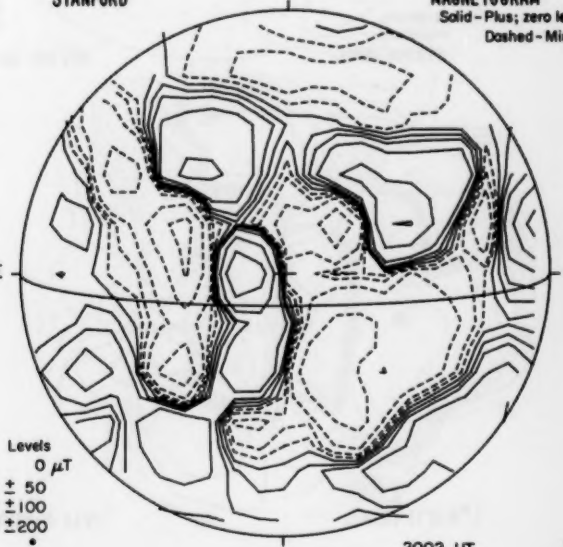
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

2002 UT

Sp

95

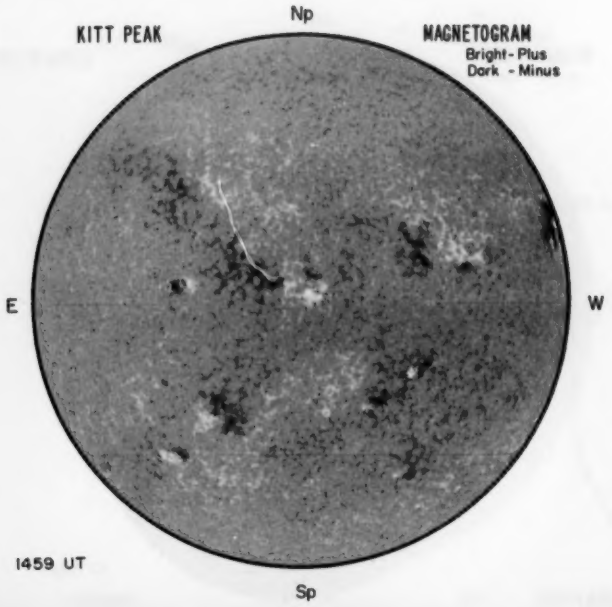
Aug 80

AUGUST 26, 1980 (P = 19.52, B_o = 7.07, L_o = 42.56)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

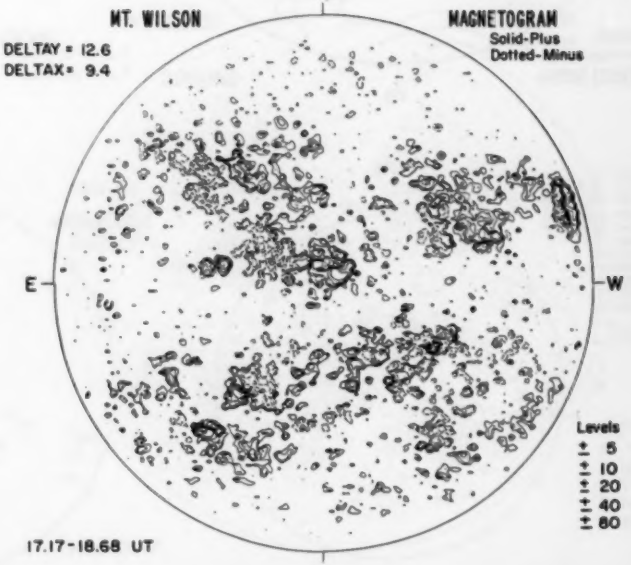
E NO DATA 26-27 AUG W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W
1459 UT
Sp

MT. WILSON Sp Np MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.6
DELTAX = 9.4



E W
Levels
± 5
± 10
± 20
± 40
± 80
17.17-18.68 UT
Sp

26
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

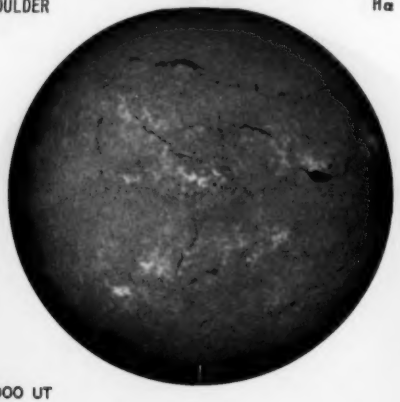
17.17-18.68 UT

Sp

BOULDER

Np

Hα



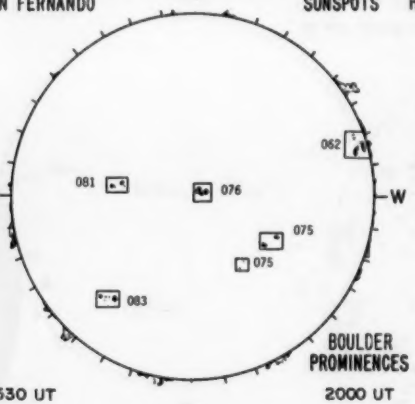
E W

2000 UT

Sp

SAN FERNANDO

Np



E W

1530 UT

Sp

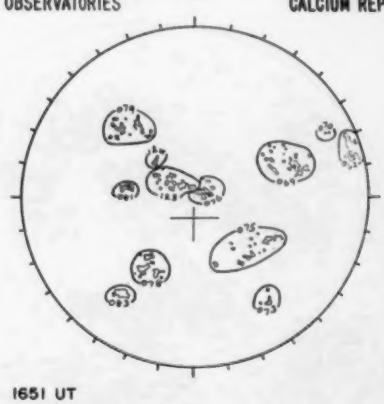
SUNSPOTS

BOULDER PROMINENCES

2000 UT

HALE OBSERVATORIES

Np



E W

1651 UT

Sp

CALCIUM REPORT

FAIR	JA

62- 2500-4.0
69- 1200-3.0
70- 0100-2.5
73- 0200-2.5
75- 1000-3.0
76- 0500-3.0
78- 0800-3.0
79- 1000-3.0
81- 0300-3.5
83- 0600-3.5
23- 1000-3.0
24- 0200-2.5

NOSC LA POSTA

Np

2.0 CM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E SCHEDULE W

---- UT

Sp

Ant. Temp. Unit 100° K

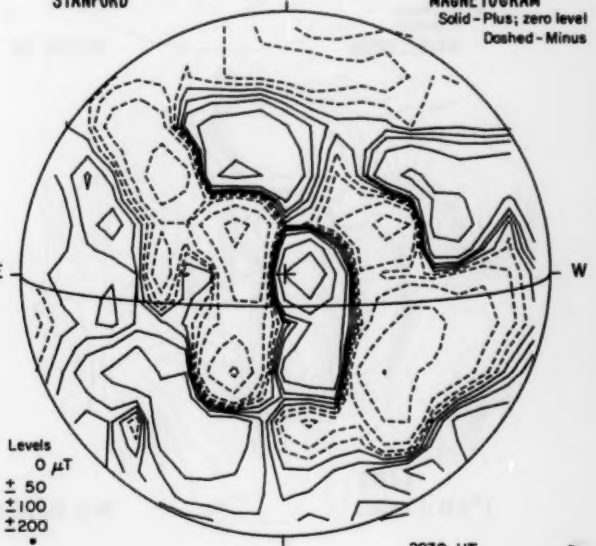
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

2039 UT

Sp

97

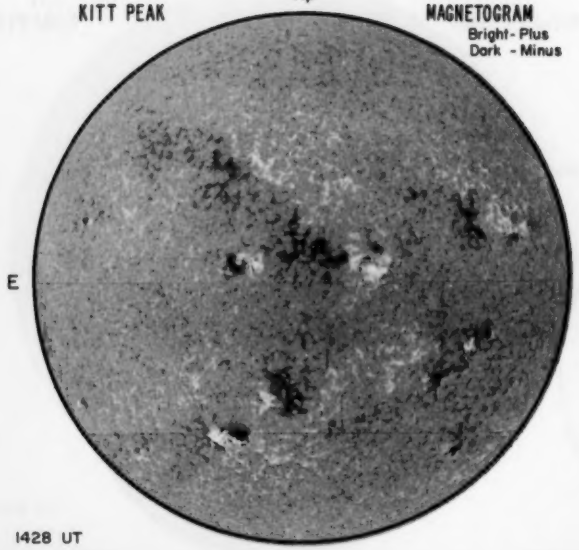
Aug 80

AUGUST 27, 1980 (P = 19.80, B_o = 7.10, L_o = 29.35)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

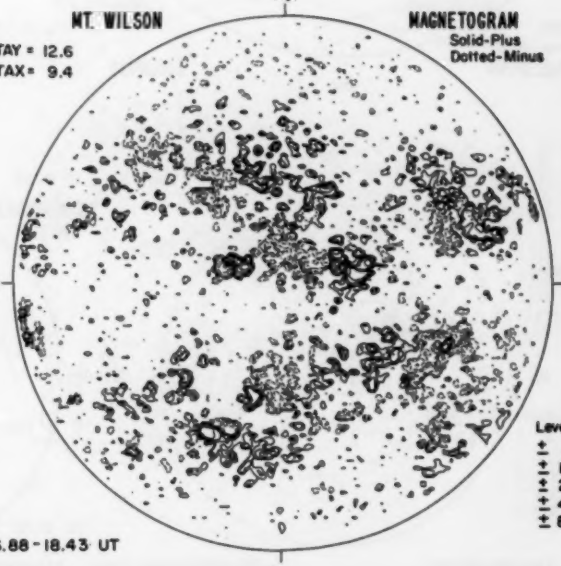
1428 UT

Sp

Sp
Np

MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus

DELTAY = 12.6
DELTAX = 9.4



E W

Levels
± 5
± 10
± 20
± 40
± 80

16.88 - 18.43 UT

Sp

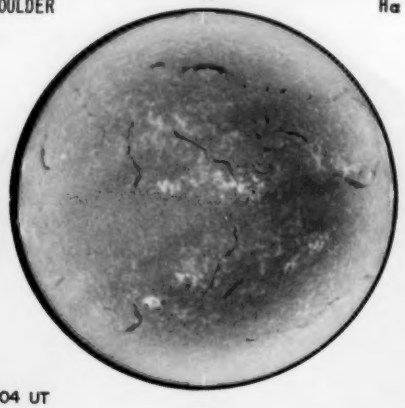
27

BOULDER Np Hα BOULDER Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

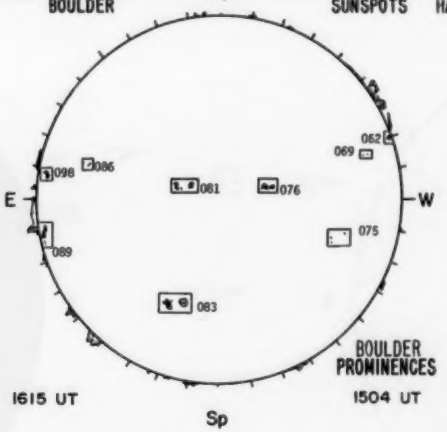
± 80

27

BOULDER Np Hα



BOULDER Np SUNSPOTS HALE OBSERVATORIES



BOULDER PROMINENCES
1504 UT

CALCIUM REPORT Np

FAIR	JA
62-	1400-3.5
69-	1100-3.0
73-	0100-2.5
75-	0600-2.5
76-	0500-3.0
78-	0700-3.0
79-	0500-3.0
81-	0400-3.0
83-	0700-4.0
86-	0100-3.0
89-	0500-3.5
90-	0300-3.5
23-	0700-3.0
24-	0100-2.5

NOSC LA POSTA Np 2.0 CM

NO DATA

E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

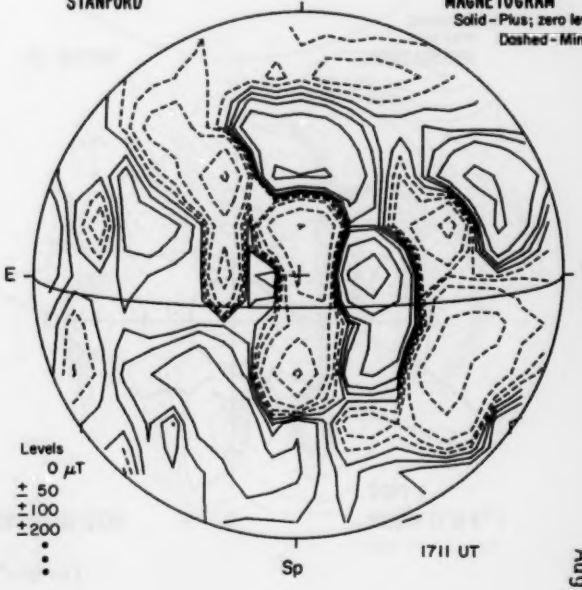
NO DATA

E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



AUGUST 28, 1980 (P = 20.08, B_o = 7.12, L_o = 16.14)

SACRAMENTO PEAK

Np

CORONA (1.15 $R_\odot$)
5303 Å

E

W

1747 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1411 UT

Sp

MT. WILSON

Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY =
DELTAX =

E

NO DATA

W

Levels
± 5
± 10
± 20
± 40
± 80

Sp

BOULDER

Np

Hα

SAN FERNANDO

Np

SUNSPOTS

HALE OBSERVATORIES

Np

CALCIUM REPORT

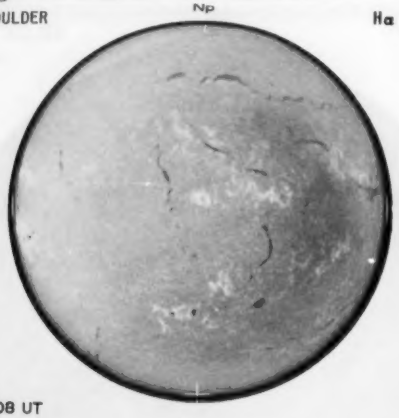
1411 UT

Sp

Sp

BOULDER

Np



E W

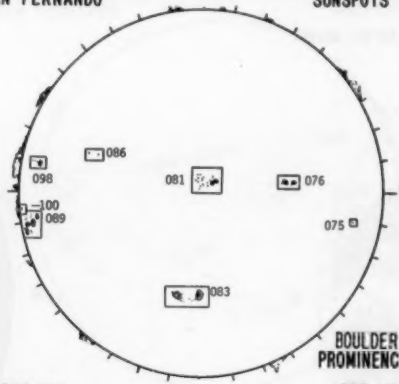
1408 UT

Sp

Hα

SAN FERNANDO

Np



E W

1540 UT

Sp

SUNSPOTS

BOULDER PROMINENCES

1408 UT

HALE OBSERVATORIES

Np

E W

1755 UT

Sp

CALCIUM REPORT

FAIR	JA

69- 0900-3.0
73- 0100-2.5
75- 0800-2.5
76- 0500-3.5
78- 0800-3.0
79- 0900-2.5
81- 1300-3.0
83- 0900-3.0
86- 0100-3.5
89- 1700-3.5
98- 2200-4.0
00- 0400-4.0
23- 0800-3.0
24- 0100-2.5

NOSC LA POSTA

Np

2.0 CM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

NOSC LA POSTA

Np

8.6 MM

NO DATA

E

SCHEDULE

W

---- UT

Sp

Ant. Temp. Unit 100° K

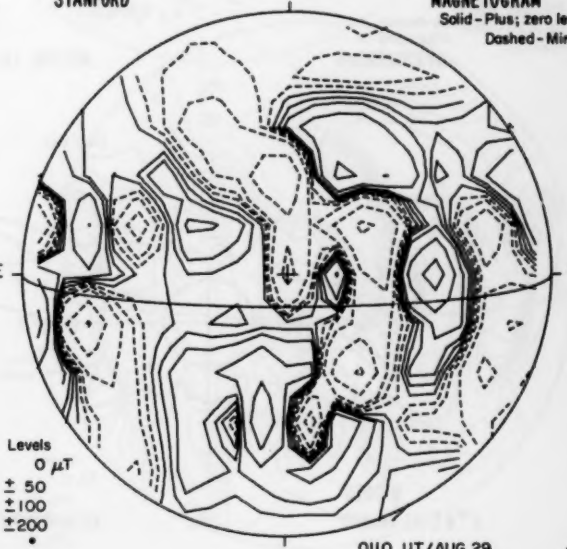
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

±200

Sp

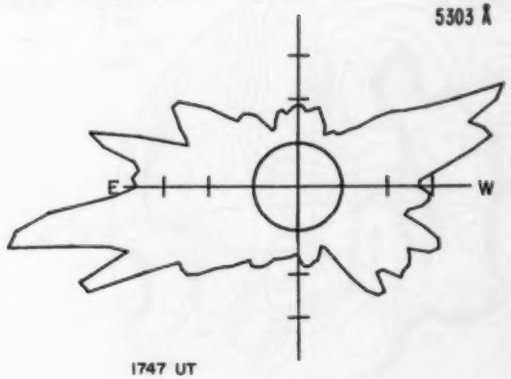
0110 UT/AUG 29

101

Aug 80

AUGUST 29, 1980 (P = 20.35, B_o = 7.15, L_o = 2.92)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å



1747 UT

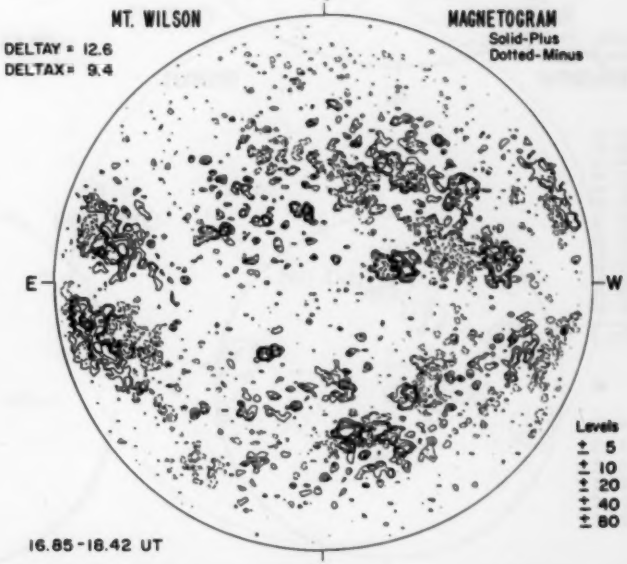
Sp

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

1438 UT

Sp

MT. WILSON Np MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.6
DELTAX = 9.4



16.85 - 18.42 UT

Sp

29
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

1438 UT

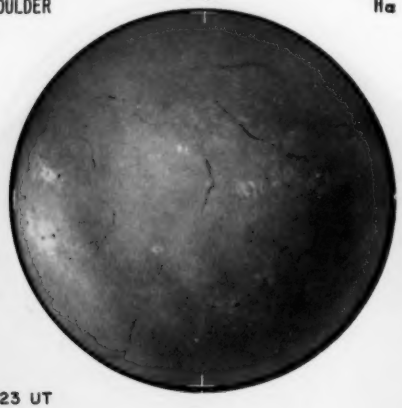
Sp

16.85-18.42 UT

Sp

29

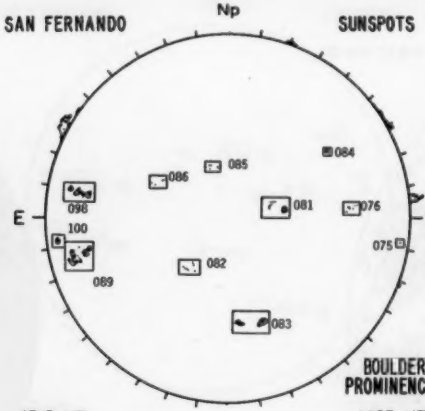
BOULDER



1423 UT

Hα

SAN FERNANDO



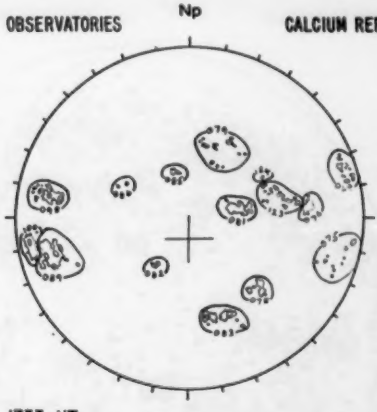
1515 UT

SUNSPOTS

BOULDER PROMINENCES

1423 UT

HALE OBSERVATORIES



1733 UT

CALCIUM REPORT

FAIR | JA

69- 1000-3.0
76- 0800-3.0
78- 0800-3.5
79- 0700-3.0
81- 1000-3.5
82- 0200-3.5
83- 1000-2.5
85- 0200-4.0
86- 0200-3.0
89- 3400-4.0
98- 1400-3.5
00- 1500-4.0
23- 0900-3.0
24- 0100-3.0

NOSC LA POSTA Np 2.0 CM

NO DATA

E SCHEDULE W

---- UT Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

E SCHEDULE W

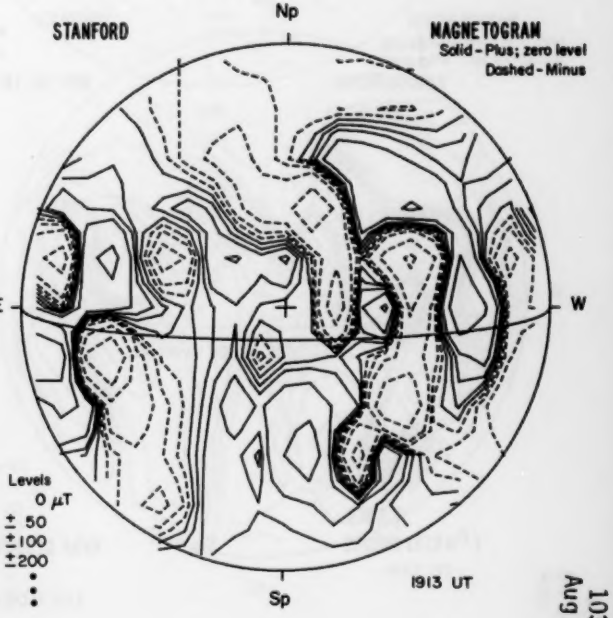
---- UT Sp Ant. Temp. Unit 100° K

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



1913 UT

103

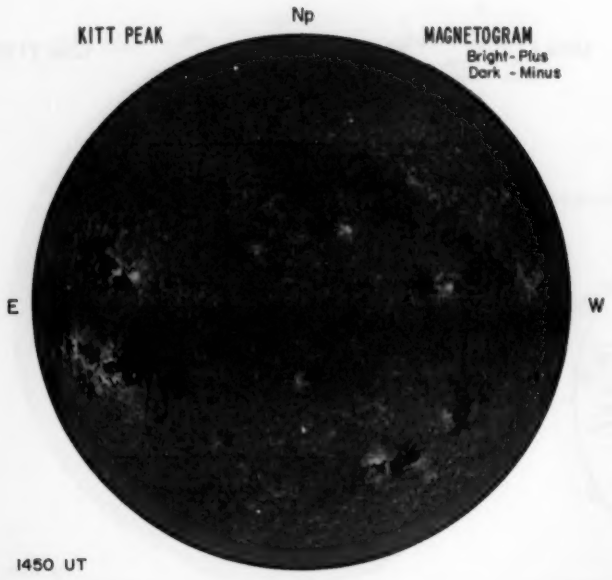
Aug 80

AUGUST 30, 1980 (P = 20.62, B_o = 7.17, L_o = 349.71)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E NO DATA 30-31 AUG W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

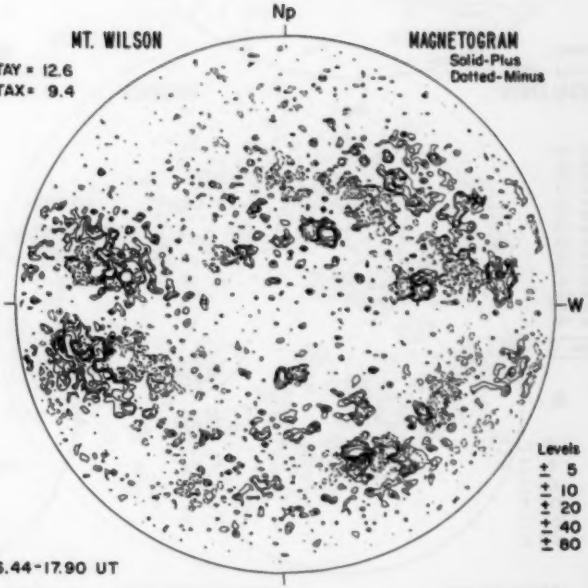


E W

1450 UT Sp

Sp
Np MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.4



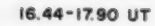
E W

Levels
± 5
± 10
± 20
± 40
± 60

16.44-17.90 UT Sp

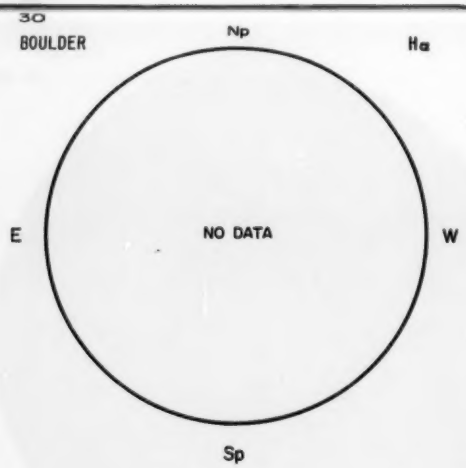
30
BOULDER Np Hα SAN FERNANDO Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

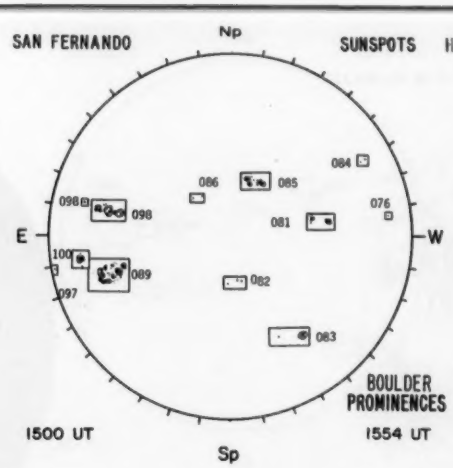
1450 UT
Sp

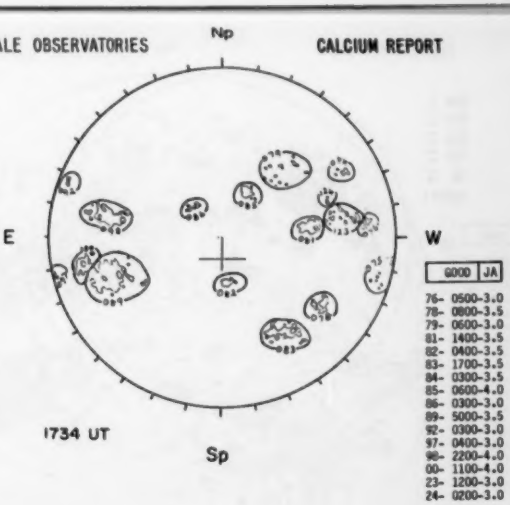

16.44-17.90 UT

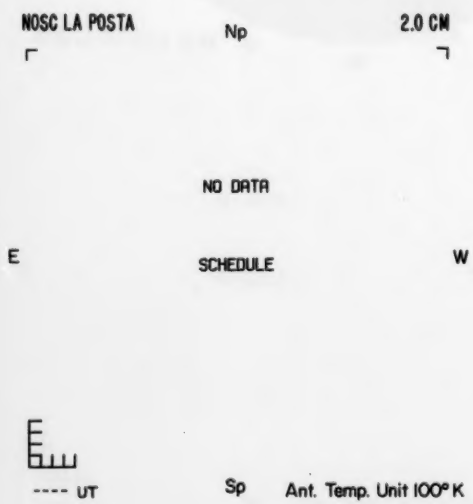
Sp

30

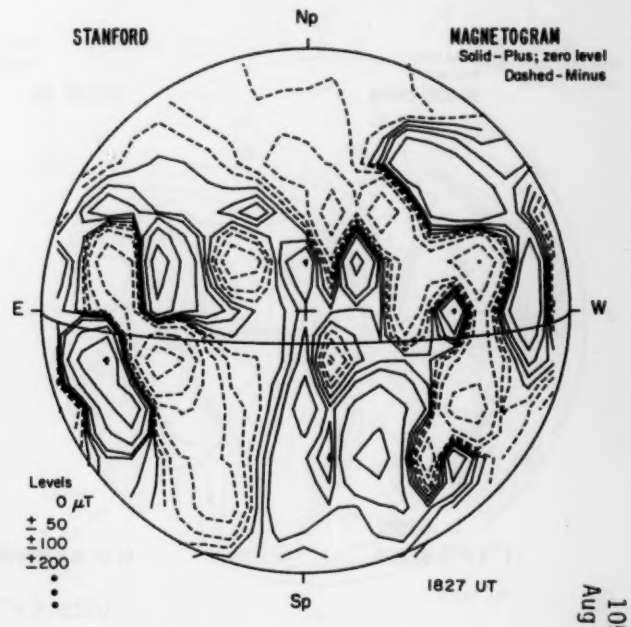

BOULDER
Np
Hα
E
NO DATA
W
Sp


SAN FERNANDO
Np
SUNSPOTS
E
W
084
086
085
076
098
098
081
100
089
082
097
083
BOULDER
PROMINENCES
1500 UT
Sp
1554 UT


HALE OBSERVATORIES
Np
CALCIUM REPORT
E
W
GOOD
JA
76- 0500-3.0
78- 0800-3.5
79- 0600-3.0
81- 1400-3.5
82- 0400-3.5
83- 1700-3.5
84- 0300-3.5
85- 0600-4.0
86- 0300-3.0
89- 5000-3.5
92- 0300-3.0
97- 0400-3.0
98- 2200-4.0
00- 1100-4.0
23- 1200-3.0
24- 0200-3.0
1734 UT
Sp


NOSC LA POSTA
Np
2.0 CM
NO DATA
E
SCHEDULE
W
---- UT
Sp
Ant. Temp. Unit 100° K

NOSC LA POSTA
Np
8.6 MM
NO DATA
E
SCHEDULE
W
---- UT
Sp
Ant. Temp. Unit 100° K


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
Sp
1827 UT

105
Aug 80

AUGUST 31, 1980 (P = 20.88, B_o = 7.18, L_o = 336.50)

SACRAMENTO PEAK Np CORONA (1.15 $R_\odot$)
5303 Å

E W

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus

E W

1358 UT

Sp

Sp
Np
MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus
DELTAY = 12.6
DELTAX = 9.5

E W

Levels
± 5
± 10
± 20
± 40
± 80

17.38 - 18.91 UT

Sp

31

BOULDER Np Hα BOULDER Np SUNSPOTS HALE OBSERVATORIES Np CALCIUM REPORT

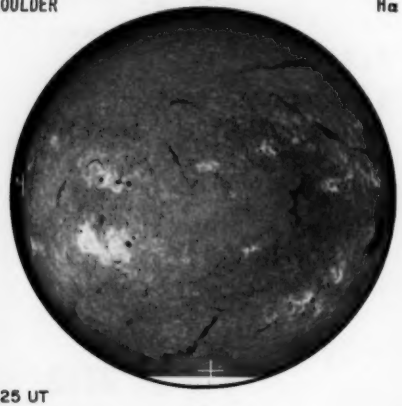
1358 UT

Sp

17.38-18.91 UT

Sp

BOULDER Np Hα

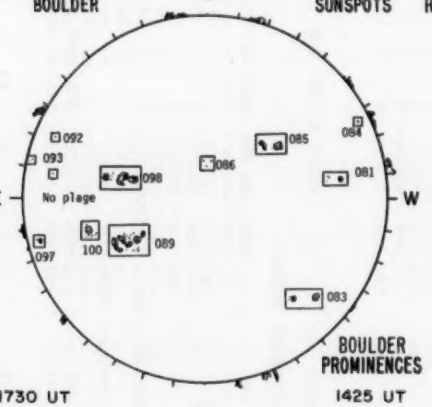


E W

1425 UT

Sp

BOULDER Np SUNSPOTS



E W

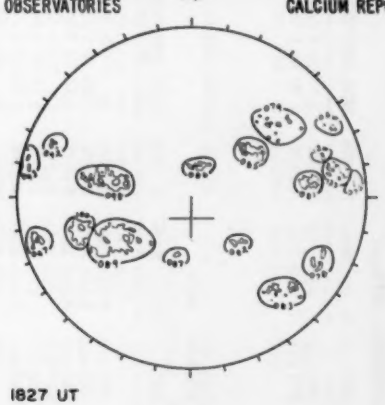
1730 UT

Sp

BOULDER PROMINENCES

1425 UT

HALE OBSERVATORIES Np CALCIUM REPORT



E W

1827 UT

Sp

GOOD | JA

76- 0500-3.0
78- 0900-3.0
79- 0600-3.0
81- 0900-3.5
82- 0400-3.0
83- 1000-2.5
84- 0300-3.5
85- 1000-3.5
86- 0400-3.0
87- 0100-3.0
89- 5600-4.0
92- 0300-3.5
93- 0400-3.0
97- 0800-3.5
98- 2400-3.5
00- 2600-3.5
23- 0800-3.0
24- 0200-3.0

NOSC LA POSTA Np 2.0 CM

NO DATA

E SCHEDULE W

---- UT

Sp Ant. Temp. Unit 100° K

NOSC LA POSTA Np 8.6 MM

NO DATA

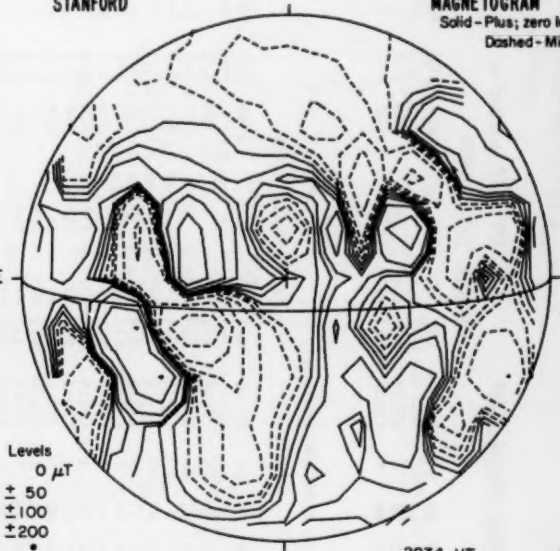
E SCHEDULE W

--- UT

Sp Ant. Temp. Unit 100° K

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



E W

Levels
0 μT
± 50
±100
±200

2034 UT

Sp

107
Aug 80

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17036 CMP DATE 1.4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	4	17036	N12	W44	8	100	2.0		N11	W52				B	70	2	DSO
80	08	5	17036	N12	W55	6	100	3.0		N09	W59				M	80	5	DAO

HALE REGION 17016 CMP DATE 2.1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	07	27	17016	S32	E65	4	700	3.5										
80	07	28	17016	S32	E56	0	700	3.5	21627	S36	E53	4	(AP)	3	H		1	AXX
80	07	29	17016	S32	E41	2	600	3.0	21627	S36	E40	4	(B)	3	B	10	1	AXX
80	07	30	17016	S33	E28	1	1000	3.5	21627	S36	E26	4	(AP)	3	H	10	3	CAO
80	07	31	17016	S33	E17	359	700	3.5		S36	E15				H		1	AXX
80	08	1	17016	S33	E05	359	900	3.0		S36	E04				H	10	2	BXO
80	08	2	17016	S33	W08	357	500	3.0	21636	S35	W13	4	(AP)	1	H	10	1	AXX
80	08	3	17016	S33	W22	359	500	2.5										
80	08	4	17016	S33	W33	357	500	2.5										
80	08	5	17016	S33	W40	351	800	3.0										
80	08	6	17016	S32	W57	355	300	3.0										
80	08	7	17016	S32	W67	352	200	2.5										
80	08	8	17016	S32	W78	349	100	2.5										

HALE REGION 17024 CMP DATE 2.2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	1	17024	S22	E07	357	100	2.5										

HALE REGION 17015 CMP DATE 2.8 RETURN OF REGION 16958 ROTATION 3

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	07	27	17015	S17	E72	357	200	2.5										
80	07	28	17015	S17	E64	352	400	2.5										
80	07	29	17015	S16	E52	351	400	2.5		S20	E59				M	60	4	CRO
80	07	30	17015	S17	E39	350	500	3.0										
80	07	31	17015	S17	E26	350	400	3.0										
80	08	1	17015	S17	E15	349	300	2.5										
80	08	2	17015	S17	E01	348	400	2.5										
80	08	3	17015	S17	W16	353	200	2.5										
80	08	4	17015	S17	W27	351	400	2.0										
80	08	5	17015	S17	W38	349	300	2.5										
80	08	6	17015	S17	W52	350	200	2.5										
80	08	7	17015	S17	W66	351	100	2.5										
80	08	8	17015	S19	W70	341	100	2.5										

HALE REGION 17020 CMP DATE 3.4 RETURN OF REGION 16954 ROTATIONS 2 AND 5

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	07	28	17020	S29	E70	346	200	2.5										
80	07	29	17020	S28	E57	346	300	3.0	21629	S30	E68	336	(AP)	2	B	20	2	BXO
80	07	30	17020	S31	E46	343	500	2.5	21629	S30	E54	336	(AP)	2	H		1	AXX
80	07	31	17020	S31	E35	341	700	2.0	21629	S30	E41	336	(AP)	2	H		1	AXX
80	08	1	17020	S31	E22	342	600	2.5		S32	E28				B		1	AXX
80	08	2	17020	S31	E11	338	500	2.5										
80	08	3	17020	S31	W04	341	400	2.5										
80	08	4	17020	S32	W13	337	400	2.5										
80	08	5	17020	S33	W25	336	200	2.5										

CONT

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17020 (CONT) CMP DATE 3.4 RETURN OF REGION 16954 ROTATIONS 2 AND 5

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	6	17020	S35	W34	332	100	2.5										
80	08	7	17020	S35	W47	332	100	2.0										
80	08	8	17020	S33	W58	329	100	2.5										

HALE REGION 17019 CMP DATE 3.5

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	07	28	17019	N18	E77	339	200	3.0	21626	N18	E78	339	AP	1	P	10	2	BXO
80	07	29	17019	N19	E65	338	300	3.5	21626	N19	E65	339	(B)	3	B	20	2	BXO
80	07	30	17019	N19	E50	339	400	3.5	21626	N19	E52	338	(B)	3	H	20	3	CRO
80	07	31	17019	N19	E37	339	800	3.5	21626	N20	E39	338	(B)	3	H	20	3	BXO
80	08	1	17019	N19	E25	339	600	3.5		N18	E25				H	10	2	AXX
80	08	2	17019	N19	E11	338	500	3.5		N18	E15				H	20	3	BXO
80	08	3	17019	N20	W03	340	500	3.0	21638	N19	W03	340	(AP)	2	H	30	4	BXO
80	08	4	17019	N19	W15	339	400	3.0										
80	08	5	17019	N20	W28	339	400	3.5										
80	08	6	17019	N19	W43	341	400	3.5										
80	08	7	17019	N20	W53	338	200	3.5	21644	N19	W55	341	(AP)	2				
80	08	8	17019	N20	W67	338	200	3.0										

HALE REGION 17028 CMP DATE 5.6

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	1	17028	S21	E53	311	100	2.5										
80	08	2	17028	S22	E38	311	100	3.0	21634	S24	E40	311	(AP)	1				
80	08	3	17028	S22	E24	313	100	3.0	21634	S23	E27	310	(B)	3	H	20	3	BXO
80	08	4	17028	S21	E14	310	100	3.0		S19	E24				M	20	3	CRO
80	08	5	17028	S21	W01	312	100	2.5										
80	08	6	17028	S21	W14	312	100	2.5										
80	08	7	17028	S21	W26	311	100	3.0	21645	S21	W24	310	(B)	2	H	30	3	CRO
80	08	8	17028	S20	W40	311	300	3.0	21645	S22	W37	309	(B)	3	H	30	6	CSO
80	08	9	17028	S20	W55	313	400	2.5	21645	S21	W52	311	(B)	3	H	10	3	BXO
80	08	10	17028	S20	W66	310	300	2.5										

HALE REGION 17026 CMP DATE 5.8

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	1	17026	N08	E55	309	200	3.0	21633	N05	E56	308	(AP)	2	H	10	1	AXX
80	08	2	17026	N08	E41	308	100	2.5		N12	E48				B	10	2	BXO
80	08	3	17026	N08	E26	311	200	3.0										
80	08	4	17026	N08	E15	309	200	3.0		N08	E13				B		1	AXX
80	08	5	17026	N08	E01	310	200	3.0										
80	08	6	17026	N08	W14	312	200	3.0										
80	08	7	17026	N08	W27	312	100	2.5										
80	08	8	17026	N08	W40	311	100	3.0										
80	08	9	17026	N08	W52	310	100	3.0										
80	08	10	17026	N08	W68	312	100	2.5										

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17022 CMP DATE 6.3 NEW REGION IN LOCATION OF REGION 16971

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	07	31	17022	N14	E77	299	600	3.5		N14	E77				H	10	1	AXX
80	08	1	17022	N14	E64	300	500	3.5	21632	N11	E62	302	(AP)	3	H	10	1	AXX
80	08	2	17022	N14	E47	302	600	3.0	21632	N11	E49	302	(B)	2	H	20	2	BXO
80	08	3	17022	N14	E35	302	600	3.0										
80	08	4	17022	N14	E26	298	400	3.0										
80	08	5	17022	N13	E09	302	200	3.0										
80	08	6	17022	N12	W05	303	100	3.0										
80	08	7	17022	N12	W18	303	100	3.0		N16	W10				H		1	AXX
80	08	8	17022	N12	W32	303	200	2.5										
80	08	9	17022	N13	W45	303	100	3.0										
80	08	10	17022	N12	W60	304	100	2.5										
80	08	11	17022	N11	W73	304	100	2.5										

HALE REGION 17023 CMP DATE 6.4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	07	31	17023	S07	E72	304	300	3.5	21630	S07	E75	302	AP	1	H	20	3	AXX
80	08	1	17023	S07	E62	302	400	3.5	21630	S10	E60	304	(AP)	3	H	30	2	CRO
80	08	2	17023	S08	E47	302	500	3.0	21630	S10	E47	304	(B)	3	H	20	1	HRX
80	08	3	17023	S08	E33	304	200	3.0		S07	E34				H		1	AXX
80	08	4	17023	S08	E22	302	200	3.0		S06	E32				B	30	2	BXO
80	08	5	17023	S08	E07	304	300	3.0										
80	08	6	17023	S08	W04	302	200	3.0	21642	S08	W05	304	(AP)	3				
80	08	7	17023	S07	W18	303	200	3.0		S04	W09				P	90	13	DSO
80	08	8	17023	S07	W33	304	100	2.5		S06	W25				P	210	18	DSI
80	08	9	17023	S08	W45	303	100	3.0		S06	W37				H	200	22	ESO
80	08	10	17023	S10	W58	302	200	2.5	21655	S11	W56	302	(B)	3	H	10	2	BXO
80	08	11	17023	S11	W74	305	200	3.0	21655	S12	W69	302	(B)	3	B	10	1	AXX

HALE REGION 17027 CMP DATE 7.1 RETURN OF REGION 16966 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	1	17027	S05	E76	288	100	2.5		S08	E67				M	40	1	HRX
80	08	2	17027	S05	E62	287	200	3.0		S07	E52				R	10	2	BXO
80	08	3	17027	S05	E46	291	200	3.0	21639	S06	E47	290	(AP)	3	H	10	2	AXX
80	08	4	17027	S05	E35	289	400	3.0	21639	S05	E35	290	(B)	3	H	50	2	DSO
80	08	5	17027	S06	E19	292	500	3.0	21639	S05	E22	290	(B)	4	H	50	7	DAI
80	08	6	17027	S05	E06	292	400	3.5	21639	S05	E07	292	(B)	3	H	60	19	DSO
80	08	7	17027	S05	W07	292	500	3.0	21639	S05	W06	292	(B)	4	H	110	17	DAO
80	08	8	17027	S05	W23	294	500	3.0	21639	S05	W20	292	(B)	4	H	130	20	DSO
80	08	9	17027	S05	W36	294	900	3.0	21639	S05	W35	294	(B)	4	H	200	22	ESO
80	08	10	17027	S05	W50	294	1500	3.0	21639	S05	W48	294	(BY)	4	H	170	9	ESI
80	08	11	17027	S05	E65	166	3000	3.0	21639	S05	W64	297	(B)	4	B	160	10	CSI
80	08	12	17027	S05	W76	295	1000	3.5	21639	S05	W78	293	B	2	R	260	7	CSO

HALE REGION 17025 CMP DATE 7.2 RETURN OF LEADING HALF OF REGION 16965 ROTATION 3

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	1	17025	N16	E72	292	200	2.5		N14	E64				H	10	1	AXX
80	08	2	17025	N16	E60	289	600	3.0		N12	E52				H	20	2	BXO
80	08	3	17025	N16	E47	290	500	3.0										
80	08	4	17025	N16	E35	289	500	3.0										
80	08	5	17025	N16	E22	289	900	3.0										
80	08	6	17025	N16	E07	291	600	3.0		N17	E14				P	10	1	AXX
80	08	7	17025	N16	W06	291	700	3.0	21646	N15	W08	294	(AP)	2	H		1	AXX
80	08	8	17025	N17	W20	291	900	3.0	21646	N16	W19	291	(AP)	2				
80	08	9	17025	N17	W29	287	800	3.0										
80	08	10	17025	N17	W43	287	500	3.0	21656	N16	W39	285	(AP)	2	P	90	2	HSX
80	08	11	17025	N17	W57	288	400	2.5	21656	N16	W54	287	(AP)	2	M	70	1	HSX
80	08	12	17025	N17	W70	289	300	2.5										

CONT

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17025 (CONT) CMP DATE 7.2 RETURN OF LEADING HALF OF REGION 16965 ROTATION 3

				CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	13	17025	N17 W78	283	200	2.5		N19 W68				P	50	1	HSX

HALE REGION 17032 CMP DATE 8.1

				CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	2	17032	S18 E68	281	100	2.5		S14 E72				B		1	AXX
80	08	3	17032	S18 E55	282	200	2.5		S13 E62				B	30	1	HSX
80	08	4	17032	S18 E44	280	200	3.0		S13 E49				B	40	1	HSX
80	08	5	17032	S18 E31	280	100	3.0		S13 E36				B	20	1	HRX
80	08	6	17032	S17 E17	281	200	3.0		S12 E24				H	10	1	AXX
80	08	7	17032	S17 E05	280	300	3.0		S12 E10				H	30	1	HRX
80	08	8	17032	S17 W12	283	100	2.5		S12 W02				H	20	1	HSX
80	08	9	17032	S17 W22	280	100	2.5		S12 W16				H		1	AXX
80	08	10	17032	S26 W35	279	100	2.0									

HALE REGION 17029 CMP DATE 8.5 LEADING EDGE S PORTION 16963, TRAILING NEW ROTATIONS 2&1

				CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	2	17029	N18 E73	276	600	3.0									
80	08	3	17029	N18 E60	277	400	3.0									
80	08	4	17029	N20 E48	276	500	3.0									
80	08	5	17029	N19 E37	274	500	3.0		N19 E38				P	10	2	AXX
80	08	6	17029	N18 E27	271	700	3.0	21643	N18 E29	270	(B)	4	H	90	8	DSO
80	08	7	17029	N18 E11	274	1000	3.5	21643	N18 E16	270	(BP)	4	H	130	12	DAO
80	08	8	17029	N18 W02	273	1300	3.5	21643	N18 E03	269	(BP)	5	H	120	16	DSO
80	08	9	17029	N18 W13	271	900	3.0	21643	N19 W12	271	(BP)	4	H	100	7	DSO
80	08	10	17029	N18 W25	269	900	3.5	21643	N18 W28	274	(BP)	4	H	70	3	CSO
80	08	11	17029	N19 W40	271	1500	3.5	21643	N18 W41	274	(BP)	4	B	50	2	CSO
80	08	12	17029	N19 W52	271	600	3.5	21643	N18 W58	273	AP	3	B	40	1	HSX
80	08	13	17029	N20 W62	267	600	3.5	21643	N18 W66	272	(AP)	3	B	10	1	AXX
80	08	14	17029	N19 W72	264	500	3.5	21643	N18 W80	273	(AP)	2	B	10	1	AXX

HALE REGION 17031 CMP DATE 8.5

				CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	2	17031	S14 E78	271	300	2.5	21635	S17 E74	277	(AP)	3	H	30	1	HSX
80	08	3	17031	S13 E59	278	300	2.5	21635	S15 E62	275	(AP)	3	H	30	1	HAX
80	08	4	17031	S13 E48	276	600	3.0	21635	S13 E49	276	(AP)	3	H	40	1	HSX
80	08	5	17031	S13 E35	276	800	3.0	21635	S13 E36	276	(AP)	4	H	10	1	HRX
80	08	6	17031	S14 E25	273	500	3.0	21635	S12 E23	276	(AP)	3	H	10	1	AXX
80	08	7	17031	S13 E11	274	200	3.0	21635	S12 E11	275	(AP)	4	H	30	1	HRX
80	08	8	17031	S13 W03	274	400	3.0	21635	S12 W03	275	(AP)	4	H	20	1	HSX
80	08	9	17031	S13 W17	275	200	3.0	21635	S12 W16	275	(AP)	3	H		1	AXX
80	08	10	17031	S13 W29	273	300	2.5	21635	S13 W27	273	(B)	2	L	10	3	AXX
80	08	10	17031	S13 W29	273	300	2.5	21657	S11 W17	263	(AF)	2	L	10	3	AXX
80	08	11	17031	S13 W43	274	400	2.5									
80	08	12	17031	S12 W57	276	300	2.0									
80	08	13	17031	S13 W67	272	200	2.0									

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17035 CMP DATE 8.7 RETURN OF REGION 16968 ROTATION 3

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	3	17035	S26	E61	276	300	2.0										
80	08	4	17035	S26	E59	265	600	3.0										
80	08	5	17035	S26	E42	269	300	2.5										
80	08	6	17035	S27	E30	268	300	3.0										
80	08	7	17035	S27	E13	272	400	3.0										
80	08	8	17035	S27	E00	271	400	3.0										
80	08	9	17035	S27	W13	271	100	3.0										
80	08	10	17035	S28	W20	264	100	3.0										
80	08	11	17035	S29	W33	264	100	2.5										
80	08	12	17035	S26	W43	262	100	2.0										
80	08	13	17035	S27	W54	259	100	2.0										

HALE REGION 17034 CMP DATE 9.3

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	3	17034	N13	E73	264	300	3.0										
80	08	4	17034	N13	E61	263	300	3.0										
80	08	5	17034	N13	E47	264	400	3.0										
80	08	6	17034	N13	E35	263	400	3.0		N17	E28				B	80	6	DAO
80	08	7	17034	N13	E20	265	400	3.0	21647	N12	E26	260	(B)	3	H	20	2	BXO
80	08	8	17034	N13	E07	264	400	3.0	21647	N10	E12	260	(BP)	3	H	30	7	CSO
80	08	9	17034	N12	W05	263	400	3.5	21647	N10	W03	262	(BY)	4	H	120	20	DAO
80	08	10	17034	N11	W18	262	1000	3.0	21647	N10	W16	262	(B)	4	H	250	5	DKO
80	08	11	17034	N11	W33	264	1000	3.0	21647	N11	W29	262	(B)	5	B	230	6	DSO
80	08	12	17034	N13	W45	264	1100	3.0	21647	N12	W47	262	B	4	B	200	12	DSO
80	08	13	17034	N13	W58	263	800	3.0	21647	N12	W55	261	(B)	4	B	110	7	CSO
80	08	14	17034	N13	W66	259	600	3.5	21647	N12	W69	262	(BP)	3	B	100	4	CSO
80	08	15	17034	N13	W84	263	300	3.5		N10	W89				R	20	1	HRX

HALE REGION 17030 CMP DATE 9.5 RETURN OF REGION 16963 ROTATION 2

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	2	17030	N27	E82	267	300	2.0										
80	08	3	17030	N30	E71	266	300	3.0										
80	08	4	17030	N30	E58	266	300	3.0										
80	08	5	17030	N28	E48	263	700	3.0										
80	08	6	17030	N28	E35	263	600	3.0										
80	08	7	17030	N28	E21	264	700	3.0										
80	08	8	17030	N28	E07	264	600	3.0										
80	08	9	17030	N28	W03	261	400	3.0										
80	08	10	17030	N29	W15	259	300	3.0										
80	08	11	17030	N29	W28	259	600	3.0										
80	08	12	17030	N31	W39	258	500	3.0										
80	08	13	17030	N31	W53	258	300	2.5										
80	08	14	17030	N31	W65	257	100	2.0										

HALE REGION 17045 CMP DATE 9.6 RETURN OF SW EDGE OF REGION 16974 ROTATION 5

			CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	8	17045	N17	E11	260	300	3.0	21649	N17	E11	261	(BP)	2	H	10	4	BXO
80	08	9	17045	N17	W02	260	300	3.0	21649	N17	W04	263	(AP)	2	H		2	AXX
80	08	10	17045	N18	W17	261	200	3.0	21649	N17	W17	263	(AP)	2	H		1	AXX
80	08	11	17045	N17	W32	263	400	2.5		N18	W37				B	50	2	CSO
80	08	12	17045	N18	W44	263	300	2.5		N18	W53				B	40	1	HSX
80	08	13	17045	N18	W57	262	200	2.5		N13	W55				B	110	7	CSO
80	08	14	17045	N17	W64	256	200	2.0		N13	W68				B	100	4	CSO
80	08	15	17045	N17	W82	261	200	2.5		N12	W80				L	50	1	HSX

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17039 CMP DATE 10.6 NEW REGION, LEADING HALF IN LOCATION OF REGION 16968

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	5	17039	S26 E59	252	600	3.0	21641	S27 E73	239	(AF)	2	H	100	1	HSX
80	08	6	17039	S26 E52	246	800	3.0	21641	S28 E60	239	(AF)	4	H	90	1	HSX
80	08	7	17039	S26 E37	248	1200	3.5	21641	S27 E47	239	(AF)	4	H	80	2	HAX
80	08	8	17039	S26 E24	247	1000	3.0	21641	S27 E35	237	(AF)	4	H	90	2	HSX
80	08	9	17039	S26 E10	248	1200	3.0	21641	S27 E22	237	(AF)	4	H	140	5	CSO
80	08	10	17039	S26 W02	246	500	3.0	21641	S27 E09	237	(AF)	4	H	80	1	HSX
80	08	10	17039	S26 W02	246	500	3.0	21658	S24 W06	252	(B)	2	H	10	2	BXO
80	08	11	17039	S26 W16	247	1200	3.0	21641	S27 W04	237	(AF)	3	B	70	3	HAX
80	08	12	17039	S24 W24	243	1000	3.0	21641	S27 W21	236	AF	4	B	70	4	CAO
80	08	13	17039	S24 W35	240	600	2.5	21641	S27 W29	235	(AF)	4	B	50	4	HAX
80	08	14	17039	S25 W48	240	400	3.0	21641	S27 W43	236	(AF)	3	B	30	2	HSX
80	08	15	17039	S25 W60	239	400	3.0	21641	S28 W55	234	(AF)	2	R	20	2	CRO
80	08	16	17039	S26 W80	244	400	2.5	21641	S25 W65	232	(AF)	2	L	20	1	HSX

HALE REGION 17037 CMP DATE 10.7 RETURN OF CENTRAL PART OF REGION 16974 ROTATION 5

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	4	17037	N23 E80	244	500	2.5									
80	08	5	17037	N18 E65	246	400	3.0									
80	08	6	17037	N17 E52	246	400	3.0		N19 E62				M	210	1	HSX
80	08	7	17037	N17 E38	247	600	3.0		N18 E48				M	110	1	HSX
80	08	8	17037	N17 E27	244	400	3.0		N17 E37				B	50	1	HSX
80	08	9	17037	N17 E15	243	700	3.0		N17 E24				B	40	1	HSX
80	08	10	17037	N17 E00	244	600	3.0		N18 E08				M	80	1	HSX
80	08	11	17037	N17 W13	244	700	2.5	21662	N17 W10	243	(AP)	2	B	50	3	CSO
80	08	12	17037	N20 W25	244	900	3.0		N24 W18				R	10	2	BXO
80	08	13	17037	N20 W37	242	400	3.0		N19 W28				P	30	1	HSX
80	08	14	17037	N20 W52	244	700	3.0									
80	08	15	17037	N20 W65	244	400	3.0									
80	08	16	17037	N19 W80	244	300	2.5									

HALE REGION 17090 CMP DATE 11.3 NEW, LOCATED IN NORTHERN PART OF 16974

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	5	17090	N25 E73	238	700	3.0									
80	08	6	17090	N25 E59	239	800	3.0									
80	08	7	17090	N26 E47	238	900	3.0									
80	08	8	17090	N26 E34	237	900	3.5	21650	N24 E32	240	(AP)	2				
80	08	9	17090	N26 E22	236	900	3.0	21650	N25 E21	238	(AP)	2	H		2	AXX
80	08	10	17090	N26 E09	235	800	3.0		N26 E16				L		2	AXX
80	08	11	17090	N26 W05	236	1300	3.0	21663	N25 W04	237	(AP)	2	B	20	5	AXX
80	08	12	17090	N26 W18	237	1200	3.5	21663	N26 W21	236	AP	2	R	10	2	BXO
80	08	13	17090	N26 W32	237	1000	3.0									
80	08	14	17090	N26 E45	147	1100	3.0									
80	08	15	17090	N26 W57	236	700	3.0									
80	08	16	17090	N27 W71	235	400	2.5									
80	08	17	17090	N28 W78	229	100	2.0									

HALE REGION 17040 CMP DATE 11.4 RETURN OF REAR PART OF REGION 16974 ROTATION 5

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	5	17040	N15 E78	233	200	3.0	21640	N17 E79	233	(AP)	2	H	70	1	HSX
80	08	6	17040	N17 E62	236	500	3.0	21640	N18 E66	233	(AP)	4	H	60	1	HSX
80	08	7	17040	N17 E46	239	300	3.0	21640	N18 E52	234	(AP)	4	H	60	1	HSX
80	08	8	17040	N17 E37	234	500	2.5	21640	N18 E39	233	(AP)	4	H	50	1	HSX
80	08	9	17040	N17 E24	234	700	3.0	21640	N18 E26	233	(AP)	4	H	60	1	HSX
80	08	10	17040	N17 E09	235	400	3.0	21640	N18 E13	233	(AP)	4	H	40	1	HSX
80	08	11	17040	N17 W04	235	500	2.5	21640	N18 W00	233	(BP)	4	B	50	3	CSO
80	08	12	17040	N18 W14	233	700	3.0	21640	N18 W17	232	AP	4	B	60	1	HSX
80	08	13	17040	N18 W26	231	300	3.0	21640	N18 W26	232	(AP)	4	B	50	1	HSX

CONT

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17040 (CONT) CMP DATE 11.4 RETURN OF REAR PART OF REGION 16974 ROTATION 5

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	14	17040	N17 W41	233	200	3.0	21640	N18 W40	233	(AP)	3	B	50	1	HSX
80	08	15	17040	N17 W54	233	300	3.0	21640	N18 W54	233	(AP)	4	B	30	1	HSX
80	08	16	17040	N18 W67	231	100	2.5	21640	N18 W66	233	(AP)	3	H	10	2	BXO
80	08	17	17040	N19 W80	231	100	2.0	21640	N18 W78	232	AP	1	R	60	3	AXX

HALE REGION 17042 CMP DATE 12.9 RETURN OF REGION 16978 ROTATION 2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	6	17042	S14 E80	218	600	3.0									
80	08	7	17042	S14 E67	218	1700	3.5	21648	S11 E65	221	(AP)	2	H	20	2	AXX
80	08	8	17042	S14 E55	216	2000	3.5		S14 E49				P	20	1	AXX
80	08	9	17042	S14 E44	214	2200	3.0	21651	S15 E40	219	(AP)	2	L	10	2	AXX
80	08	10	17042	S14 E30	214	1700	3.5	21651	S13 E24	222	(AP)	2				
80	08	11	17042	S14 E15	216	1900	3.0	21651	S12 E12	221	(AP)	2	P	30	5	AXX
80	08	12	17042	S13 E03	216	2200	3.5		S13 E04				R	10	5	BXO
80	08	13	17042	S13 W13	218	1900	3.5									
80	08	14	17042	S13 W26	218	1800	3.0									
80	08	15	17042	S13 W39	218	1100	3.5	21671	S16 W39	218	(AP)	3	R	10	2	BXO
80	08	16	17042	S15 W52	216	1100	3.0									
80	08	17	17042	S14 W65	216	600	3.0									
80	08	18	17042	S14 W76	215	300	2.0									

HALE REGION 17043 CMP DATE 12.9 NEW, IN LOCATION OF EXTREME NORTH 16975 ROTATION 4

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	6	17043	N26 E82	216	300	2.5									
80	08	7	17043	N25 E67	218	400	3.0									
80	08	8	17043	N25 E59	212	500	3.0									
80	08	9	17043	N26 E45	213	300	3.0									
80	08	10	17043	N26 E31	213	400	3.0									
80	08	11	17043	N27 E15	216	400	2.0									
80	08	12	17043	N28 E03	216	400	3.0									
80	08	13	17043	N28 W14	219	200	3.0		N25 W18				M		1	AXX
80	08	14	17043	N28 W26	218	200	3.0									
80	08	15	17043	N28 W38	217	200	3.0									
80	08	16	17043	N28 W55	219	200	2.5									
80	08	17	17043	N28 W66	217	100	2.0									
80	08	18	17043	N27 W77	216	100	2.0									

HALE REGION 17041 CMP DATE 13.0 RETURN OF REAR OF REGION 16975 ROTATION 4

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	6	17041	N16 E81	217	100	2.5									
80	08	7	17041	N17 E71	214	900	3.0									
80	08	8	17041	N17 E56	215	400	2.5									
80	08	9	17041	N16 E44	214	500	3.0									
80	08	10	17041	N16 E27	217	600	2.5		N19 E19				L	90	1	HSX
80	08	11	17041	N16 E15	216	400	2.5									
80	08	12	17041	N18 E04	215	700	3.0		N13 E04				R	10	5	BXO
80	08	13	17041	N18 W11	216	500	3.0		N15 W08				R	10	1	AXX
80	08	14	17041	N18 W24	216	700	3.0		N19 W32				M	100	1	HSX
80	08	15	17041	N18 W38	217	500	3.0		N18 W47				L	30	1	HSX
80	08	16	17041	N18 W53	217	500	2.5		N18 W62				L	20	1	HSX
80	08	17	17041	N18 W62	213	200	2.5									
80	08	18	17041	N18 W73	212	200	2.0									

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17046 CMP DATE 13.8 RETURN OF TRAILING PART OF REGION 16975 ROTATION 4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	8	17046	N15	E67	204	200	3.0										
80	08	9	17046	N15	E55	203	400	3.0										
80	08	10	17046	N15	E42	202	300	3.0										
80	08	11	17046	N16	E29	202	400	2.5										
80	08	12	17046	N17	E18	201	300	2.0										
80	08	13	17046	N17	E02	203	300	2.5										
80	08	14	17046	N17	W13	205	300	3.0										
80	08	15	17046	N17	W24	203	200	3.0										

HALE REGION 17044 CMP DATE 14.1 NEW, IN LOCATION OF 16980 ROTATION 4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	7	17044	S23	E78	207	800	3.0										
80	08	8	17044	S23	E68	203	3600	3.5										
80	08	9	17044	S25	E59	199	4400	3.5	21652	S26	E70	189	(AP)	2	H	20	2	CSO
80	08	10	17044	S25	E47	197	3500	3.5	21659	S24	E47	199	B	1	P	20	4	BXO
80	08	10	17044	S25	E47	197	3500	3.5	21652	S27	E58	188	(AF)	3	H	10	2	BXO
80	08	11	17044	S25	E35	196	5000	3.5	21652	S26	E45	188	(AF)	3				
80	08	11	17044	S25	E35	196	5000	3.5	21659	S23	E30	203	(BP)	3	B	20	2	BXO
80	08	12	17044	S24	E20	199	4400	4.0	21659	S21	E09	206	AP	2	B	10	1	AXX
80	08	13	17044	S24	E05	200	3400	3.5		S24	E11				P	10	1	AXX
80	08	14	17044	S24	W07	199	2500	3.5										
80	08	15	17044	S24	W19	198	2300	3.5										
80	08	16	17044	S24	W34	198	2700	3.0	21674	S23	W32	199	AP	1				
80	08	17	17044	S24	W46	197	2000	3.0										
80	08	18	17044	S24	W55	194	1300	2.5										
80	08	19	17044						21685	S28	W60	182	(B)	3	B	80	8	DAI
80	08	20	17044	S28	W79	191	200	2.5	21685	S27	W70	184	(B)	2	H	60	3	CAO

HALE REGION 17047 CMP DATE 14.1 RETURN OF SOUTHERN PORTION OF 16979 ROTATION 4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	8	17047	S14	E70	201	200	3.0										
80	08	9	17047	S14	E59	199	600	3.0										
80	08	10	17047	S15	E47	197	700	3.0										
80	08	11	17047	S15	E32	199	600	3.0		S20	E32				R	30	2	BXO
80	08	12	17047	S14	E18	201	400	3.0		S11	E16				R	10	1	AXX
80	08	13	17047	S14	E06	199	400	3.5										
80	08	14	17047	S15	W07	199	300	3.0										
80	08	15	17047	S14	W20	199	300	3.0										
80	08	16	17047	S14	W35	199	100	2.5										

HALE REGION 17049 CMP DATE 14.9

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	9	17049	N04	E75	183	300	2.5	21653	N05	E75	184	X	1				
80	08	10	17049	N04	E59	185	400	3.5	21653	N05	E63	183	(B)	4	H	30	2	DSO
80	08	11	17049	N04	E45	186	900	3.5	21653	N04	E47	186	(B)	4	B	150	5	DAO
80	08	12	17049	N05	E33	186	1100	4.0	21653	N05	E29	186	B	5	B	210	13	DAI
80	08	13	17049	N05	E17	188	1200	4.0	21653	N04	E20	186	(B)	4	B	320	22	DSI
80	08	14	17049	N05	E03	189	1300	3.5	21653	N04	E05	188	(B)	4	B	230	19	DHO
80	08	15	17049	N05	W10	189	1600	4.0	21653	N05	W08	187	(BP)	5	B	180	10	CSO
80	08	16	17049	N05	W24	188	1300	3.0	21653	N04	W22	189	(BP)	4	H	180	9	DHO
80	08	17	17049	N05	W37	188	1000	3.5	21653	N04	W36	190	(BP)	5	B	130	3	CSO
80	08	18	17049	N05	W50	189	800	3.0	21653	N04	W50	190	(BP)	4	H	180	7	CSO
80	08	19	17049						21653	N03	W69	191	(AP)	3	B	40	3	CSO
80	08	20	17049	N04	W75	187	200	3.0	21653	N03	W77	191	(AP)	3	H		1	AXX

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17048 CMP DATE 15.1 RETURN OF LEADING EDGE OF 16981,REST IS NEW ROTATIONS 2&1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	8	17048	N15	E86	185	100	2.5										
80	08	9	17048	N14	E75	183	800	3.5	21654	N14	E76	183	(AP)	3	H	20	3	CSO
80	08	10	17048	N14	E61	183	1100	3.5	21654	N13	E62	184	(BY)	4	H	80	2	CAO
80	08	11	17048	N14	E47	184	1900	3.5	21654	N13	E51	182	(B)	4	B	140	10	CAI
80	08	12	17048	N15	E36	183	1500	4.0	21654	N13	E33	182	B	5	B	330	23	DSI
80	08	13	17048	N14	E22	183	1500	4.0	21654	N13	E24	182	(B)	4	B	270	17	DAI
80	08	14	17048	N14	E06	186	2200	4.0	21654	N13	E09	184	(B)	4	B	190	44	DSI
80	08	15	17048	N14	W06	185	1500	4.0	21654	N12	W05	184	(BP)	4	B	100	12	DSI
80	08	16	17048	N14	W22	186	1900	3.5	21654	N12	W18	185	(BP)	4	H	50	5	DSO
80	08	17	17048	N14	W34	185	1600	3.5	21654	N12	W35	189	(BP)	4	B	80	2	DSO
80	08	18	17048	N14	W46	185	2000	3.0	21654	N12	W49	189	(BP)	4	H	90	7	CSO
80	08	19	17048						21654	N11	W69	191	(AP)	3	B	70	5	CSI
80	08	20	17048	N14	W75	187	600	3.0	21654	N12	W75	189	(B)	3	H	20	2	BXO
80	08	21	17048	N15	W80	179	300	2.5										

HALE REGION 17050 CMP DATE 15.2 NEW, IN LOCATION OF REGION 16990

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	9	17050	S07	E72	186	300	2.5										
80	08	10	17050	S07	E58	186	400	3.0		S10	E68				H	10	2	BXO
80	08	11	17050	S06	E44	187	200	3.0		S11	E53				B	20	4	CRO
80	08	12	17050	S05	E33	186	300	3.0		S10	E37				B	20	4	BXO
80	08	13	17050	S05	E17	188	200	3.0		S09	E27				B	40	6	DRO
80	08	14	17050	S06	E07	185	100	3.0		S09	E14				B	200	5	BXO
80	08	15	17050	S06	W06	185	100	3.0		S10	W00				B	20	2	AXX
80	08	16	17050	S06	W22	186	100	2.5										

HALE REGION 17051 CMP DATE 15.8 NEW, IN LOCATION OF EXTREME TAIL 16979

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	10	17051	S13	E67	177	200	3.0	21660	S12	E69	177	(BF)	2	H	10	2	BXO
80	08	11	17051	S13	E52	179	400	2.5	21660	S11	E55	178	(B)	4	B	20	4	CRO
80	08	12	17051	S11	E39	180	400	3.0	21660	S10	E37	178	B	3	B	20	4	BXO
80	08	13	17051	S11	E27	178	700	3.0	21660	S10	E28	178	(B)	4	B	40	6	DRO
80	08	14	17051	S11	E15	177	900	3.0	21660	S10	E14	179	(B)	3	B	200	5	BXO
80	08	15	17051	S11	E01	178	700	3.0	21660	S11	E01	178	(AP)	2	R	40	5	CRO
80	08	16	17051	S12	W14	178	400	3.0		S11	W06				L		1	AXX
80	08	17	17051	S11	W25	176	300	3.0										
80	08	18	17051	S12	W38	177	100	2.0										

HALE REGION 17060 CMP DATE 16.5 RETURN OF FRONT HALF OF REGION 16983 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	10	17060						21661	S26	E80	166	X	2	B	10	1	AXX
80	08	11	17060						21661	S26	E70	163	(BY)	3	B	90	4	DRI
80	08	12	17060	S25	E48	171	500	3.5	21661	S26	E51	164	B	3	B	90	5	DRO
80	08	13	17060	S25	E37	168	600	3.5	21661	S26	E44	162	(B)	3	B	100	5	DAO
80	08	14	17060	S25	E26	166	1200	3.5	21661	S25	E29	164	(B)	4	B	110	17	ESI
80	08	15	17060	S25	E12	167	900	4.5	21661	S25	E15	164	(B)	4	B	110	21	DSI
80	08	16	17060	S24	W04	168	1300	3.0	21661	S25	E04	163	(B)	4	H	150	10	DAI
80	08	17	17060	S23	W15	166	1000	3.0	21661	S25	W10	164	(BY)	3	B	60	10	DAI
80	08	18	17060	S23	W29	168	100	2.5	21661	S26	W23	163	(BP)	4	H	70	12	CSO
80	08	19	17060						21661	S26	W40	162	(AF)	2	B	30	4	CRI
80	08	20	17060	S23	W53	165	100	3.0	21661	S27	W47	161	(B)	3	H		1	AXX
80	08	21	17060	S22	W64	163	300	3.0	21661	S27	W62	162	AP	1	H		1	AXX
80	08	22	17060	S22	W71	157	100	2.0		S21	W67				H	60	1	HSX

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17056 CMP DATE 16.6 REMAINS OF NW LEADING EDGE OF 16985 ROTATION 5

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	11	17056	S13 E67	164	400	3.0		S09 E57				R	90	6	DRO
80	08	12	17056	S13 E56	163	300	3.0									
80	08	13	17056	S13 E41	164	200	3.0		S10 E37				M	40	4	DAO
80	08	14	17056	S13 E26	166	300	3.0		S10 E16				R	20	5	BXO
80	08	15	17056	S13 E14	165	300	3.0		S14 E18				R	10	5	BXO
80	08	16	17056	S14 W02	166	300	3.0	21676	S16 E01	166	B	1	P	10	2	AXO
80	08	17	17056	S14 W14	165	200	3.0									
80	08	18	17056	S14 W28	167	200	3.0									
80	08	20	17056	S15 W54	166	200	2.5									
80	08	21	17056	S15 W66	165	100	2.0									

HALE REGION 17059 CMP DATE 16.6 RETURN OF PART OF REAR 16981 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	12	17059	N19 E52	167	200	2.5		N15 E48				R	430	22	DKI
80	08	13	17059	N18 E38	167	200	3.0		N14 E32				M	310	23	DKO
80	08	14	17059	N18 E25	167	300	3.0		N13 E19				M	210	21	DKI
80	08	15	17059	N17 E15	164	200	3.0		N13 E20				R	120	20	DAO
80	08	16	17059	N17 W02	166	100	3.0		N12 W12				L	220	16	DAO
80	08	17	17059	N19 W17	168	100	3.0									
80	08	18	17059	N19 W30	169	100	2.5									

HALE REGION 17053 CMP DATE 17.1 FRONT IS NEW,REAR IS LEADING EDGE 16987 ROTATIONS 1 AND 2

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	11	17053	N09 E75	156	100	3.0	21664	N13 E79	154	(AP)	3	B	20	3	BXO
80	08	12	17053	N13 E66	153	1000	3.5	21664	N14 E60	155	AP	3	B	10	2	BXO
80	08	13	17053	N13 E49	156	800	4.0	21664	N13 E50	156	(BP)	3	B	20	6	BXO
80	08	14	17053	N13 E33	159	700	4.0	21664	N12 E32	161	(B)	3	B	60	13	CRI
80	08	15	17053	N13 E17	162	1100	3.5	21664	N11 E19	160	(B)	3	B	80	13	DSI
80	08	16	17053	N13 E04	160	1400	3.5	21664	N12 E06	161	(B)	3	H	80	16	DSI
80	08	17	17053	N13 W08	159	1700	3.5	21664	N12 W07	161	(B)	4	B	60	11	CAI
80	08	18	17053	N13 W22	161	2100	3.0	21664	N12 W20	160	(B)	3	H	90	27	CSO
80	08	19	17053					21664	N12 W38	160	(B)	3	B		1	AXX
80	08	20	17053	N13 W49	161	800	3.0	21664	N11 W48	162	(B)	4	H	100	8	DAO
80	08	21	17053	N13 W63	162	1100	3.5	21664	N11 W62	162	(B)	3	H	40	8	DRO
80	08	22	17053	N13 W72	158	1000	3.0	21664	N10 W77	164	AP	2	B	10	1	AXX
80	08	23	17053	N14 W78	151	300	2.5		N18 W70				P	60	5	BXO

HALE REGION 17066 CMP DATE 17.1

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	16	17066	N06 E04	160	200	3.0	21675	N07 E07	160	(B)	3	H	10	2	BXO
80	08	17	17066	N07 W09	160	200	3.0	21675	N06 W07	161	(B)	2	B	10	2	BXO
80	08	18	17066	N07 W23	162	200	3.0		N08 W22				B	10	1	AXX
80	08	20	17066	N07 W52	164	200	3.0		N10 W50				H	100	8	DAO
80	08	21	17066	N06 W63	162	200	3.0		N10 W65				H	40	8	DRO

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17055 CMP DATE 17.5

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	11	17055	S05	E75	156	700	2.0										
80	08	12	17055	S05	E66	153	200	2.5										
80	08	13	17055	S07	E53	152	300	3.0										
80	08	14	17055	S07	E37	155	200	3.0										
80	08	15	17055	S05	E24	155	200	3.5		S09	E33				B	30	2	BXO
80	08	16	17055	S05	E08	156	100	3.5										
80	08	17	17055	S04	W04	155	100	3.5	21683	S02	E02	152	AP	1				
80	08	18	17055	S04	W17	156	100	2.5		S08	W07				B	40	10	CAI
80	08	20	17055	S04	W44	156	100	2.5		S08	W35				H	140	8	DAO
80	08	21	17055	S04	W56	155	100	2.5		S09	W50				H	130	6	CSO
80	08	22	17055	S04	W69	155	100	2.0		S08	W65				H	100	1	HSX

HALE REGION 17054 CMP DATE 17.9 TRAILING HALF OF 16987, REST IS NEW ROTATIONS 2 AND 1

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	11	17054	N19	E78	153	1600	2.5		N15	E80				R	30	2	BXO
80	08	12	17054	N17	E65	154	1100	3.0		N13	E62				B	10	2	BXO
80	08	13	17054	N17	E58	147	1500	4.0		N12	E54				B	20	6	BXO
80	08	14	17054	N16	E40	152	2900	3.5	21668	N16	E41	152	(AP)	2	B	60	13	CRI
80	08	15	17054	N16	E28	151	2300	3.5		N15	E37				B	20	2	AXX
80	08	16	17054	N16	E14	150	1700	3.5		N11	E06				H	80	16	DSI
80	08	17	17054	N17	E01	150	2000	3.5	21680	N18	E03	151	(B)	3	M	80	10	DSO
80	08	18	17054	N18	W10	149	1200	3.0		N16	W01				H	80	21	DSO
80	08	20	17054	N18	W42	154	700	3.0										
80	08	21	17054	N17	W54	153	600	3.0		N17	W46				M	70	4	DAO
80	08	22	17054	N19	W62	148	800	3.0		N16	W54				H	70	4	DAO
80	08	23	17054	N20	W72	145	100	2.0		N16	W66				H	20	3	DRO
80	08	24	17054	N24	W79	138	100	3.0										

HALE REGION 17061 CMP DATE 17.9 RETURN OF PART OF REGION 16985 ROTATIONS 5 AND 4

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	11	17061						21665	S22	E80	153	X	2	B	20	1	HRX
80	08	12	17061	S23	E66	153	1000	3.5	21665	S21	E60	155	AP	4	B	70	2	HSX
80	08	13	17061	S23	E55	150	1300	3.0	21665	S21	E51	155	(AP)	4	B	70	1	HSX
80	08	14	17061	S23	E45	147	1000	3.5	21665	S21	E38	155	(AP)	4	B	50	1	HSX
80	08	15	17061	S22	E27	152	1100	3.0	21665	S21	E24	155	(AP)	5	B	80	1	HSX
80	08	16	17061	S22	E15	149	1100	3.0	21665	S21	E12	155	(AP)	4	H	130	6	DSO
80	08	17	17061	S21	E01	150	1000	3.0	21665	S21	W01	155	(BP)	4	B	80	5	CSO
80	08	18	17061	S21	W10	149	900	3.0	21665	S21	W13	153	(AP)	4	H	100	3	CSO
80	08	19	17061						21665	S21	W31	153	(AP)	3	B	50	1	HSX
80	08	20	17061	S19	W34	146	900	2.5	21686	S23	W25	139	(AP)	3	H		1	AXX
80	08	20	17061	S19	W34	146	900	2.5	21665	S21	W39	153	(AP)	4	H	60	1	HAX
80	08	21	17061	S20	W46	145	400	3.5	21665	S21	W53	153	(AP)	4	H	50	1	HSX
80	08	22	17061	S20	W60	146	300	3.5	21665	S21	W66	153	(AP)	3	H	60	1	HSX
80	08	23	17061						21665	S21	W79	153	AP	1	R	60	1	HSX

HALE REGION 17052 CMP DATE 18.0 S PART OF 16985,ALL 16991,TRAILING PART OF 16983 ROT 5,4&2

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	10	17052	S27	E75	169	400	3.5		S29	E80				B	10	1	AXX
80	08	11	17052	S25	E66	165	2800	3.5		S28	E70				B	90	4	DRI
80	08	12	17052	S28	E58	161	900	3.5		S26	E54				B	90	5	DRO
80	08	13	17052	S28	E50	155	2000	3.5		S26	E43				B	100	5	DAO
80	08	14	17052	S28	E38	154	3500	3.5		S25	E28				B	110	17	ESI
80	08	15	17052	S28	E28	151	3400	4.0		S26	E18				R	140	34	DAO
80	08	16	17052	S28	E14	150	3400	3.5	21677	S24	E10	157	(BP)	4	H	130	6	DSO
80	08	17	17052	S28	E03	148	3200	3.5		S25	E02				R	160	10	DSO
80	08	18	17052	S29	W09	148	2200	2.5		S24	W13				H	100	3	CSO
80	08	21	17052	S28	W40	139	1700	3.0										

CONT

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17052 (CONT) CMP DATE 18.0 S PART OF 16985,ALL 16991,TRAILING PART OF 16983 ROT 5,4&2

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	22	17052	S30	W52	138	1300	3.0		S29	W54				P	20	1	AXX
80	08	23	17052	S30	W58	131	700	2.5		S31	W68				P	20	1	AXX

HALE REGION 17057 CMP DATE 18.2 NEW, IN LOCATION OF REGION 16994

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	13	17057	S10	E57	148	900	3.0										
80	08	14	17057	S09	E48	144	400	3.0	21669	S11	E49	144	(BP)	4	B	20	2	BXO
80	08	15	17057	S09	E33	146	500	3.0	21669	S09	E35	144	(B)	4	B	30	2	BXO
80	08	16	17057	S09	E19	145	500	3.0	21669	S08	E22	145	(B)	3	H	30	4	CSO
80	08	17	17057	S08	E05	146	600	3.5	21669	S08	E07	147	(BY)	4	B	50	5	CAO
80	08	18	17057	S08	W07	146	1000	3.0	21669	S08	W06	146	(B)	4	H	60	20	CSO
80	08	19	17057						21669	S09	W24	146	(BP)	4	B	110	19	DAI
80	08	20	17057	S08	W36	148	1000	3.0	21669	S09	W35	149	(BP)	4	H	140	8	DAO
80	08	21	17057	S07	W48	147	900	3.0	21669	S09	W48	148	(BP)	4	H	130	6	CSO
80	08	22	17057	S07	W62	148	700	2.5	21669	S08	W64	151	(AP)	4	H	100	1	HSX
80	08	23	17057	S08	W75	148	300	3.0	21669	S08	W78	152	AP	2	H	100	1	HSX

HALE REGION 17067 CMP DATE 18.9 RETURN OF REGION 16989 ROTATION 2

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	13	17067						21667	N17	E69	137	(AP)	2	B	10	2	AXX
80	08	14	17067						21667	N16	E55	138	(BP)	3	B	10	1	HRX
80	08	15	17067						21667	N17	E39	140	(B)	2	B	20	2	AXX
80	08	16	17067	N16	E26	138	700	3.5	21667	N16	E27	140	(B)	3	H	50	7	CSO
80	08	17	17067	N16	E12	139	900	3.5	21667	N16	E14	140	(BP)	4	B	60	9	DAI
80	08	18	17067	N17	E02	137	500	3.0	21667	N15	W01	141	(BY)	4	H	80	21	DSO
80	08	19	17067						21667	N15	W13	135	(AP)	3	B	20	4	BXO
80	08	20	17067	N16	W29	141	500	3.0	21667	N17	W26	140	(B)	3	H	30	5	CRO
80	08	21	17067	N16	W41	140	1100	3.0	21667	N17	W40	140	(BP)	4	H	80	7	DAO
80	08	22	17067	N16	W55	141	800	3.0	21667	N16	W53	140	(B)	3	H	70	4	DAO
80	08	23	17067	N15	W65	138	900	3.0	21667	N16	W66	140	(B)	3	H	20	3	DRO
80	08	24	17067	N17	W77	136	300	2.5	21667	N15	W78	139	B	2	H	10	2	BXO

HALE REGION 17063 CMP DATE 19.0

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	12	17063						21666	S12	E80	135	AP	2	P	10	1	AXX
80	08	13	17063	S11	E70	135	500	3.0	21666	S11	E70	136	(AP)	2	B	30	1	HRX
80	08	14	17063	S10	E58	134	500	3.5	21666	S11	E58	135	(AP)	3	B	30	1	HSX
80	08	15	17063	S10	E45	134	400	3.5	21666	S11	E46	133	(AP)	3	B	20	2	HRX
80	08	16	17063	S10	E32	132	300	3.5	21666	S11	E33	134	(AP)	3	H	20	1	HAX
80	08	17	17063	S08	E17	134	300	3.0	21666	S10	E20	134	(AP)	4	B	30	2	CAO
80	08	18	17063	S09	E04	135	200	3.0	21666	S11	E06	134	(AP)	4	H	20	3	CSO
80	08	20	17063	S10	W23	135	200	2.5		S09	W33				B	110	7	DSO
80	08	21	17063	S09	W36	135	300	3.0		S08	W40				L	110	10	DSO
80	08	22	17063	S10	W49	135	300	3.0		S08	W58				L	80	4	HSX
80	08	23	17063	S12	W67	140	100	2.0		S11	W76				R	130	1	HSX
80	08	24	17063	S12	W77	136	200	2.0										

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17058 CMP DATE 19.5

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	13	17058	N09	E79	126	200	3.0		N10	E76				P	30	1	AXX
80	08	14	17058	N10	E66	126	400	3.5		N13	E64				M	40	2	BXO
80	08	15	17058	N10	E52	127	500	4.0	21672	N10	E51	128	(AP)	2	B	10	1	AXX
80	08	16	17058	N10	E38	126	800	3.5	21672	N10	E40	127	(B)	2	H	10	5	BXO
80	08	17	17058	N11	E25	126	1000	4.5	21672	N10	E25	129	(B)	5	B	90	13	DAI
80	08	18	17058	N11	E10	129	1000	3.0	21672	N10	E12	128	(B)	4	H	200	37	DSO
80	08	19	17058						21672	N11	W06	128	(B)	3	B	100	13	DSO
80	08	20	17058	N11	W17	129	1000	3.0	21672	N10	W15	129	(B)	4	H	110	10	EAO
80	08	21	17058	N11	W30	129	1400	3.5	21672	N10	W29	129	(BP)	4	H	70	12	CSO
80	08	22	17058	N11	W43	129	1100	3.0	21672	N09	W48	135	(AP)	4	H	30	3	CSO
80	08	23	17058	N11	W55	128	1000	3.0	21672	N08	W61	135	(AP)	3	H	20	1	HSX
80	08	24	17058	N12	W70	129	400	3.0	21672	N07	W75	136	AP	1	H		1	AXX
80	08	25	17058	N12	W78	124	200	3.0		N15	W87				L	20	2	CSO

HALE REGION 17068 CMP DATE 19.5 RETURN OF LEADING EDGE OF REGION 16992 ROTATIONS 4 AND 3

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	13	17068	S16	E75	130	600	3.0		S13	E70				B	30	1	HRX
80	08	14	17068	S16	E61	131	500	3.0		S13	E58				B	30	1	HSX
80	08	15	17068	S17	E48	131	300	3.0		S12	E43				B	20	2	HRX
80	08	16	17068	S17	E36	128	200	3.0	21679	S17	E44	123	(AF)	2	H	30	4	CSO
80	08	17	17068	S17	E25	126	200	3.0		S12	E30				B	10	3	BXO
80	08	18	17068	S18	E10	129	200	2.0		S13	E20				H	90	27	CSO
80	08	20	17068	S17	W16	128	200	2.5		S13	W09				H	20	4	BXO
80	08	21	17068	S16	W27	126	100	3.0		S12	W20				B	10	3	BXO
80	08	22	17068	S17	W43	129	100	3.0										
80	08	23	17068	S17	W55	129	100	2.0										

HALE REGION 17064 CMP DATE 20.1 RETURN OF NORTHERN PART OF REGION 16992 ROTATIONS 4 AND 3

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	14	17064	S14	E71	121	900	3.0	21670	S14	E70	123	(BP)	2	B	40	2	CSO
80	08	15	17064	S14	E56	123	500	3.5	21670	S13	E57	122	(B)	3	B	20	2	CRO
80	08	16	17064	S14	E44	120	1200	3.0	21670	S12	E44	123	(BP)	3	H	30	4	CSO
80	08	17	17064	S14	E30	121	600	3.5	21670	S12	E32	122	(B)	4	B	10	3	BXO
80	08	18	17064	S14	E18	121	300	3.0	21670	S12	E18	122	(BP)	3	H	30	5	CSO
80	08	19	17064						21670	S12	E01	121	(AP)	3	B	10	4	CRO
80	08	20	17064	S14	W09	121	300	3.0	21670	S12	W07	121	(AP)	3	H	20	4	BXO
80	08	21	17064	S15	W20	119	500	3.0		S12	W20				B	10	3	BXO
80	08	22	17064	S15	W35	121	700	3.0										
80	08	23	17064	S18	W46	119	300	2.0										
80	08	24	17064	S18	W60	119	200	2.0										

HALE REGION 17062 CMP DATE 20.8

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	14	17062	N18	E80	112	200	4.0										
80	08	15	17062	N18	E68	111	600	4.5	21673	N18	E70	109	(BF)	3	B	120	6	DSO
80	08	16	17062	N17	E56	108	2000	4.0	21673	N18	E57	110	(BF)	4	H	480	6	DAO
80	08	17	17062	N17	E42	109	1900	4.0	21673	N18	E44	110	(BY)	5	B	410	15	EKI
80	08	18	17062	N17	E28	111	2000	3.0	21673	N18	E31	109	(B)	5	H	350	36	ESO
80	08	19	17062						21673	N19	E13	109	(BF)	4	B	380	30	EKI
80	08	20	17062	N17	E01	111	2000	3.5	21673	N19	E05	109	(BY)	5	H	330	45	EKI
80	08	21	17062	N18	W11	110	3400	3.0	21673	N19	W09	109	(BY)	5	H	500	48	FKI
80	08	22	17062	N18	W24	110	3800	3.0	21673	N18	W20	107	(Y)	5	H	540	22	EKI
80	08	23	17062	N18	W36	109	3100	3.5	21673	N18	W33	107	(BY)	5	H	800	11	EKI
80	08	24	17062	N19	W50	109	2600	3.0	21673	N18	W47	108	(BY)	4	H	750	55	EAI
80	08	25	17062	N18	W62	108	3100	3.5	21673	N18	W62	109	(B)	4	H	500	31	EAI
80	08	26	17062	N18	W74	108	2500	4.0	21673	N20	W70	104	(B)	4	H	440	16	FAI
80	08	27	17062	N18	W85	106	1400	3.5	21673	N20	W80	101	(AP)	3	B	90	2	CSO

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17091 CMP DATE 21.3 RETURN OF TRAILING PART OF REGION 16992 ROTATIONS 4 AND 3

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	CLASS	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	15	17091	S22 E60	119	500	3.0	AXX									
80	08	16	17091	S23 E52	112	500	3.0	BXO									
80	08	17	17091	S23 E42	109	500	2.5	AXX									
80	08	18	17091	S23 E30	109	300	3.0	BXO	21684	S20 E33	107	(AP)	2				
80	08	19	17091					DAI	21684	S21 E15	107	(AP)	2	B	10	5	BXO
80	08	20	17091	S24 E09	103	800	3.0	DSO									
80	08	20	17091	S24 E09	103	800	3.0	DSO									
80	08	21	17091	S23 W06	105	600	3.0	EAO	21684	S22 E07	107	(B)	3	H	20	7	BXO
80	08	22	17091	S23 W16	102	500	3.5	CSO		S22 W01				P	10	1	AXX
80	08	23	17091	S23 W31	104	500	2.5	CSO									
80	08	24	17091	S25 W40	99	300	2.0	HSX									
80	08	25	17091	S26 W56	102	300	2.0	AXX									
								CSO									

HALE REGION 17070 CMP DATE 22.3 NEW, IN LOCATION OF REGION 16997

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	CLASS	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	16	17070	N23 E72	92	100	2.0	HRX									
80	08	17	17070	N24 E58	93	100	2.5	HSX									
80	08	18	17070	N25 E47	92	200	2.5	HRX									
80	08	20	17070	N25 E20	92	200	2.5	CSO									
80	08	21	17070	N26 E06	93	200	2.5	BXO									
80	08	22	17070	N26 W05	91	200	3.5	CSO									
80	08	23	17070	N23 W17	90	100	2.0	BXO		N19 W27				M	550	48	EKI
80	08	24	17070	N26 W33	92	100	2.0	BXO									
80	08	25	17070	N26 W45	91	100	2.0										
80	08	26	17070	N26 W56	90	100	2.5										
80	08	27	17070	N26 W68	89	100	2.0										

HALE REGION 17065 CMP DATE 22.6

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	CLASS	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	16	17065	S17 E78	86	200	2.0	CSO									
80	08	17	17065	S16 E67	84	100	3.0	CRO	21682	S16 E69	85	(AP)	2				
80	08	18	17065	S17 E53	86	100	2.5	CSO									
80	08	20	17065	S17 E27	85	100	2.0	BXO									
80	08	21	17065	S15 E14	85	100	2.5	CRO									
80	08	22	17065	S16 W01	87	100	3.0	BXO									
								BXO									

HALE REGION 17069 CMP DATE 24.1 NEW, IN LOCATION OF REGION 17002

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	CLASS	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	17	17069	N16 E80	71	700	4.0	DSO	21681	N15 E80	74	X	3	B	30	3	BXO
80	08	18	17069	N16 E69	70	1000	3.5	DAO	21681	N15 E67	73	(B)	4	H	110	8	DSO
80	08	19	17069					EKI	21681	N15 E51	71	(B)	3	B	60	6	CSO
80	08	20	17069	N16 E42	70	1000	2.5	ESO	21681	N14 E43	71	(BY)	3	H	100	7	CAO
80	08	21	17069	N17 E31	68	2000	3.5	EKI	21681	N14 E29	71	(BF)	3	H	90	11	CAO
80	08	22	17069	N17 E18	68	2700	3.0	EKI	21681	N14 E16	71	(B)	4	H	120	2	DAO
80	08	23	17069	N17 E05	68	2100	3.5	FKI	21681	N14 E03	71	(B)	3	H	50	3	CSO
80	08	23	17069	N17 E05	68	2100	3.5	EKI	21692	N23 E14	60	(BY)	3	H	30	3	CRO
80	08	24	17069	N18 W06	65	1900	3.0	EAI	21695	N15 W02	63	AP	1	H	20	5	CSO
80	08	24	17069	N18 W06	65	1900	3.0	FAI	21692	N22 E03	58	(B)	3	H		2	BXO
								CSO									

CONT

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17069 (CONT) CMP DATE 24.1 NEW, IN LOCATION OF REGION 17002

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	24	17069	N18 W06	65	1900	3.0	21695	N15 W02	63	AP	1	H	20	5	CSO
80	08	25	17069	N16 W21	67	2200	3.0	21695	N15 W12	59	(AP)	1	H	10	3	BXO
80	08	25	17069	N16 W21	67	2200	3.0	21681	N14 W24	71	(AF)	3	H		1	AXX
80	08	25	17069	N16 W21	67	2200	3.0	21692	N23 W16	63	(AP)	2	B	10	1	AXX
80	08	26	17069	N16 W55	69	1200	3.0		N14 W31				L	10	2	AXX
80	08	27	17069	N17 W46	67	1100	3.0									
80	08	28	17069	N17 W61	68	900	3.0									
80	08	29	17069	N17 W70	64	1000	3.0									

HALE REGION 17073 CMP DATE 24.6

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	20	17073	S31 E50	62	200	3.0	21687	S30 E53	61	(AF)	2				
80	08	21	17073	S30 E35	64	300	3.0									
80	08	22	17073	S30 E23	63	300	2.5									
80	08	23	17073	S31 E12	61	300	3.0									
80	08	24	17073	S31 W02	61	200	2.5									
80	08	25	17073	S29 W16	62	200	2.5									
80	08	26	17073	S30 W29	63	200	2.5									
80	08	27	17073	S31 W42	63	100	2.5									
80	08	28	17073	S32 W55	62	100	2.5									

HALE REGION 17075 CMP DATE 25.2 RETURN OF REGION 17008 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	20	17075	S11 E61	51	400	2.5									
80	08	21	17075	S08 E50	49	700	3.0									
80	08	22	17075	S09 E37	49	700	3.0		S14 E28				P	10	1	AXX
80	08	23	17075	S09 E22	51	800	3.0	21693	S07 E16	58	(B)	3	H	20	1	HRX
80	08	23	17075	S09 E22	51	800	3.0	21694	S14 E24	50	(AP)	3	H	20	1	HRX
80	08	24	17075	S10 E10	49	700	2.5	21696	S08 E12	49	(AF)	2	H		2	AXX
80	08	24	17075	S10 E10	49	700	2.5	21694	S13 E10	51	AP	1	H		2	AXX
80	08	24	17075	S10 E10	49	700	2.5	21693	S08 E03	58	(AP)	2	H		1	AXX
80	08	25	17075	S08 W07	53	1200	2.5	21693	S06 W12	59	(B)	3	H	50	13	DSO
80	08	25	17075	S08 W07	53	1200	2.5	21694	S13 W03	50	AP	2	H	20	3	CSO
80	08	26	17075	S09 W19	53	1000	3.0	21694	S13 W16	50	(AP)	3	H	20	3	BXO
80	08	26	17075	S09 W19	53	1000	3.0	21693	S08 W25	59	(BP)	3	H	50	6	DAO
80	08	27	17075	S10 W33	54	600	2.5	21693	S08 W39	60	(B)	4	B	30	3	CRO
80	08	28	17075	S10 W48	55	800	2.5	21693	S06 W55	62	(AP)	4	B	10	1	AXX
80	08	29	17075	S10 W60	54	600	2.0	21693	S05 W69	63	(AP)	4	H		1	AXX
80	08	30	17075	S11 W68	48	300	1.5									

HALE REGION 17076 CMP DATE 26.4

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	20	17076	N08 E77	35	400	3.0	21688	N10 E79	35	(AP)	3	H	70	1	HSX
80	08	21	17076	N10 E63	36	700	3.5	21688	N10 E65	35	(AP)	4	H	250	5	CSO
80	08	22	17076	N09 E50	36	900	3.5	21688	N10 E52	35	(AP)	4	H	230	4	CSO
80	08	23	17076	N09 E36	37	700	3.0	21688	N09 E37	37	(BP)	5	H	260	1	HSX
80	08	24	17076	N09 E23	36	600	3.0	21688	N09 E24	37	(BP)	5	H	270	7	DAO
80	08	25	17076	N09 E09	37	600	3.0	21688	N09 E10	37	(AP)	4	H	230	13	DAO
80	08	26	17076	N09 W04	38	500	3.0	21688	N09 W02	36	(AP)	4	H	150	4	DSO
80	08	27	17076	N08 W16	37	500	3.0	21688	N09 W16	37	(AP)	4	B	100	12	DSO
80	08	28	17076	N08 W33	40	500	3.5	21688	N09 W27	34	(AP)	4	B	40	9	DSO
80	08	29	17076	N08 W43	37	800	3.0	21688	N10 W42	36	(AP)	3	H	20	4	CSO
80	08	30	17076	N08 W55	35	500	3.0		N09 W58				H	10	1	AXX
80	08	31	17076	N08 W67	34	500	3.0									

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17084 CMP DATE 26.9

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	30	17084	N27	W51	31	300	3.5	21706	N31	W51	32	(B)	4	H	20	2	CSO
80	08	31	17084	N27	W63	30	300	3.5	21706	N27	W67	35	(AP)	3	H	10	1	AXX
80	09	1	17084	N27	W78	31	200	3.5	21706	N28	W78	34	(AP)	2	L		1	AXX

HALE REGION 17123 CMP DATE 27.4

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	21	17123	N12	E72	27	900	3.5		N11	E65				H	250	5	CSO
80	08	22	17123	N11	E60	26	500	3.5		N11	E52				H	230	4	CHO
80	08	23	17123	N13	E47	26	300	3.5		N10	E38				H	260	1	HKX
80	08	24	17123	N12	E34	25	1100	2.5		N10	E26				H	270	7	DAO
80	08	25	17123	N13	E21	25	900	3.0		N09	E14				R	220	9	DAO
80	08	26	17123	N13	E07	27	1000	3.0		N09	E04				L	180	15	DKI
80	08	27	17123	N14	W04	25	700	3.0		N09	W14				B	100	12	DSI
80	08	28	17123	N14	W18	25	800	3.0		N09	W27				B	40	8	DSO
80	08	29	17123	N14	W32	26	900	3.0		N09	W42				B	20	4	DAO
80	08	30	17123	N14	W45	25	1200	3.0		N09	W48				L	10	3	BXO
80	08	31	17123	N14	W58	25	800	3.0										
80	09	1	17123	N14	W74	27	700	2.5										
80	09	2	17123	N14	W85	25	300	2.0										

HALE REGION 17124 CMP DATE 27.8

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	21	17124	N19	E77	22	200	3.5										
80	08	22	17124	N18	E65	21	400	3.5	21690	N19	E68	19	AF	2	B	20	2	BXO
80	08	23	17124	N17	E50	23	200	3.0	21690	N20	E55	19	(AF)	3	B	10	1	AXX
80	08	24	17124	N19	E39	20	100	2.0										
80	08	25	17124	N19	E26	20	200	3.0	21697	N20	E27	20	X	2				
80	08	26	17124	N18	E14	20	200	2.5										
80	08	27	17124	N18	E01	20	100	2.5										
80	08	28	17124	N19	W14	21	100	2.5										
80	08	29	17124	N18	W26	20	100	3.0										
80	08	30	17124	N18	W48	28	200	3.0										
80	08	31	17124	N18	W52	19	200	3.0										
80	09	1	17124	N18	W66	19	100	2.5										

HALE REGION 17078 CMP DATE 28.0

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	22	17078	S17	E67	19	500	3.0	21691	S17	E68	19	AP	1	B	20	4	BXO
80	08	23	17078	S16	E56	17	500	3.0	21691	S17	E54	20	(AP)	2	B	40	3	BXO
80	08	24	17078	S15	E41	18	900	3.0	21691	S18	E42	19	(BP)	3	H	30	7	CSO
80	08	25	17078	S16	E28	18	600	3.0	21691	S18	E27	20	(AP)	3	H	20	7	CSO
80	08	26	17078	S16	E16	18	800	3.0		S19	E15				H		1	AXX
80	08	27	17078	S17	E04	17	700	3.0		S19	E11				L	10	4	AXX
80	08	28	17078	S17	W12	19	800	3.0										
80	08	29	17078	S17	W25	19	800	3.5										
80	08	30	17078	S17	W36	16	800	3.5										
80	08	31	17078	S17	W49	16	900	3.0										
80	09	1	17078	S16	W61	14	1000	3.0		S15	W60				P	10	2	AXX
80	09	2	17078	S16	W72	12	900	3.0	21714	S14	W72	14	(AP)	3	H	20	5	BXO

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17081 CMP DATE 28.4

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	08	23	17081	N10	E67	6	100	2.0
80	08	24	17081	N10	E53	6	100	2.0
80	08	25	17081	N11	E37	9	200	3.0
80	08	26	17081	N10	E24	10	300	3.5
80	08	27	17081	N09	E12	9	400	3.0
80	08	28	17081	N10	W04	11	1300	3.0
80	08	29	17081	N10	W16	10	1000	3.5
80	08	30	17081	N10	W31	11	1400	3.5
80	08	31	17081	N11	W43	10	900	3.5
80	09	1	17081	N11	W58	11	1000	3.5
80	09	2	17081	N11	W70	10	500	3.5
80	09	3	17081	N12	W83	9	100	3.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21698	N10	E37	10	(B)	2	H	10	4	BXO
21698	N10	E25	9	(BP)	4	H	50	10	DAO
21698	N10	E11	10	(B)	4	B	40	12	DRI
21698	N10	W01	8	(BP)	4	B	30	7	CSX
21698	N10	W15	9	(B)	4	H	120	9	DAO
21698	N12	W28	9	(BP)	4	H	170	6	DSO
21698	N10	W43	11	(B)	4	H	120	9	DSO
21698	N10	W56	12	(BP)	4	H	40	1	HAX
21698	N10	W70	12	(B)	3	H	100	1	HRX
21698	N10	W85	14	AP	1	L	20	1	HSX

HALE REGION 17079 CMP DATE 28.6 RETURN OF REGION 17007 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	08	21	17079	N30	E80	19	100	2.0
80	08	22	17079	N29	E73	13	400	2.0
80	08	23	17079	N32	E63	10	500	3.0
80	08	24	17079	N30	E52	7	500	3.0
80	08	25	17079	N31	E38	8	800	3.0
80	08	26	17079	N31	E26	8	1000	3.0
80	08	27	17079	N32	E15	6	500	3.0
80	08	28	17079	N32	W02	9	900	2.5
80	08	29	17079	N32	W13	7	700	3.0
80	08	30	17079	N30	W23	3	600	3.0
80	08	31	17079	N32	W33	0	600	3.0
80	09	1	17079	N32	W48	1	600	3.0
80	09	2	17079	N32	W60	0	600	3.0
80	09	3	17079	N31	W70	356	200	2.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS

HALE REGION 17083 CMP DATE 28.9

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	08	26	17083	S28	E28	6	600	3.5
80	08	27	17083	S28	E16	5	700	4.0
80	08	28	17083	S27	E02	5	900	3.0
80	08	29	17083	S27	W12	6	1000	2.5
80	08	30	17083	S27	W24	4	1700	3.5
80	08	31	17083	S26	W35	2	1000	2.5
80	09	1	17083	S26	W50	3	1300	3.0
80	09	2	17083	S26	W61	1	700	3.0
80	09	3	17083	S25	W70	356	200	2.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21699	S28	E30	4	(BP)	3	H	90	15	CAO
21699	S28	E17	4	(B)	4	B	240	20	DSO
21699	S28	E05	2	(B)	5	B	370	16	DAO
21699	S28	W09	3	(B)	5	H	450	4	EKO
21699	S26	W22	3	(BP)	5	H	410	13	ESO
21699	S27	W35	3	(B)	4	H	320	12	EAO
21699	S27	W47	3	(B)	5	H	240	8	ESO
21699	S27	W60	2	(B)	4	H	200	4	CAO
21699	S27	W73	2	(B)	2	B	700	2	CSO

HALE REGION 17085 CMP DATE 30.2

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	08	29	17085	N23	E06	348	200	4.0
80	08	30	17085	N23	W08	348	600	4.0
80	08	31	17085	N23	W22	349	1000	3.5
80	09	1	17085	N23	W35	348	1000	3.5
80	09	2	17085	N23	W47	347	900	3.5
80	09	3	17085	N23	W60	346	500	3.0
80	09	4	17085	N23	W71	346	600	3.0
80	09	5	17085					

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21704	N22	E04	350	(B)	4	H	10	2	CRO
21704	N23	W05	346	(B)	4	H	210	13	DAO
21704	N23	W20	348	(B)	4	H	350	13	DAO
21704	N23	W33	349	(B)	4	H	200	13	DKO
21704	N23	W46	348	(B)	4	H	130	6	DSO
21704	N23	W59	348	(B)	4	B	1100	5	DSO
21704	N23	W71	346	(B)	3	B	90	4	CSO
21704	N24	W77	339	B	1	M	80	4	CRO

REGIONS OF SOLAR ACTIVITY

AUGUST 1980

HALE REGION 17099 CMP DATE 30.4

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	09	2	17099	S14	W44	344	100	2.5	21715	S15	W42	344	(AF)	2	H	20	2	BXO
80	09	3	17099	S14	W58	344	100	2.5		S09	W49				L		1	AXX

HALE REGION 17082 CMP DATE 30.6

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	29	17082	S08	E12	342	200	3.5	21703	S09	E12	342	(B)	3	H	30	7	DRO
80	08	30	17082	S08	W02	342	400	3.5	21703	S08	W02	343	(B)	3	H	20	4	DSO
80	08	31	17082	S08	W15	342	400	3.0		S08	W06				L	10	3	BXO
80	09	1	17082	S08	W30	343	300	3.0										
80	09	2	17082	S08	W42	342	300	3.0	21716	S09	W41	343	(B)	2				
80	09	3	17082	S08	W57	343	100	2.0		S09	W49				L		1	AXX
80	09	4	17082	S08	W70	345	200	2.0										

HALE REGION 17086 CMP DATE 31.5

			CALCIUM PLAGE DATA							SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	08	27	17086	N16	E52	329	100	3.0										
80	08	28	17086	N17	E36	331	100	3.5	21701	N18	E39	328	(B)	2	B	10	4	BXO
80	08	29	17086	N17	E24	330	200	3.0	21701	N18	E24	330	(B)	3	H	10	2	CRO
80	08	30	17086	N17	E10	330	300	3.0	21701	N17	E12	329	(BF)	3	H	20	3	CSO
80	08	31	17086	N17	W04	331	400	3.0	21701	N18	W00	328	(BP)	2	H	10	3	BXO
80	08	31	17086	N17	W04	331	400	3.0	21707	N10	W08	336	(AF)	2				
80	09	1	17086	N17	W16	329	500	3.5	21701	N17	W11	327	(B)	3	H	10	3	BXO
80	09	2	17086	N17	W28	328	300	3.5	21701	N18	W23	325	AP	1	L		2	BXO
80	09	3	17086	N17	W41	327	200	3.0										
80	09	4	17086	N18	W53	328	200	3.0										

NOTE: NO CALCIUM SPECTROHELIOGRAMS WERE SECURED AT THE MT. WILSON OBSERVATORY ON AUGUST 19, 1980.

REMARKS: NONE

CONTIGUOUS PLAGES FOR AUGUST 1980: 17089 - 17100

DAILY CALCIUM PLAGE INDEX

AUGUST 1980

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
80	8	1	33.8	80	8	11	57.4	80	8	21	39.9
80	8	2	25.8	80	8	12	61.0	80	8	22	37.1
80	8	3	17.9	80	8	13	57.5	80	8	23	27.9
80	8	4	14.5	80	8	14	67.8	80	8	24	28.5
80	8	5	20.8	80	8	15	65.3	80	8	25	22.7
80	8	6	18.8	80	8	16	64.2	80	8	26	20.3
80	8	7	24.6	80	8	17	61.2	80	8	27	14.9
80	8	8	32.2	80	8	18	41.8	80	8	28	22.4
80	8	9	36.7	80	8	19	*	80	8	29	29.6
80	8	10	38.8	80	8	20	26.7	80	8	30	43.0
								80	8	31	50.7

* NO OBSERVATIONS

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1980

DAY	UNIVERSAL TIME				WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE							KNOWN FLARE	HALE REGION
	START	END	MAX	IMP		SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD		
02	0654	0724	0702	1-	1				1				NF	
02	1350	1452	1410	2+	3						2		*	
04	1347	1415	1355	1	2			2					NF	
04	1900	1941	1904	1-	1				1		1		*	
05	0733	0830	0743	1-	1				1				*	
05	2255	2308U	2302	1-	1	1							NF	
06	0552	0654	0600	1-	3	1			1				NF	
06	1030	1054	1038	1	3			2					*	
06	1416	1441	1427	1	3			2					*	
06	1435	1526	1457	2	1			1					*	
06	1948	2020	1953	1-	1						1		*	
07	0550	0708	0611	1	3			2					NF	
07	0745	0820	0754	1	5	1			2		1		NF	
07	1118	1235	1136	3	5	2		6	2	1			*	
07	1250	1330	1315	1	3			2					NF	
07	1542	1615	1556	1	3			2					*	
07	1944	2031	2008	2+	1						1		*	
08	0100	0128	0104	1	1	1							NF	
08	0144	0233	0210	1-	1				1				NF	
08	0710	0742	0711	1	3			3					*	
08	1046	1136	1053	1	3			2					*	
09	2016	2106	2023	1-	5				1		6		2006	17044
09	2339	0048	2349	1-	5				1		2		2345E	17034
10	0205	0229	0213	1-	1				1				NF	
10	0229	0300	0232	1-	1						1		*	
10	0258	0332	0308	1-	3	1			1				*	
10	0512	0534	0518	1-	1				1				NF	
10	1808	1907	1824	1-	5				1		7		1803	17052
10	2101	2337	2130	1	5	1			1		7		2102	17051
11	0054	0228	0113	1	5	2			1		2		NF	
11	1247	1415	1301	1-	1				1		1		*	
12	0124	0244	0131	1-	1	1							NF	
12	0555	0800	0614	1	1				1				*	
12	1255	1350U	1255D	1-	1	1			1		1		*	
12	1559	1646	1611	1-	3				1		1		1557	17055
13	0044	0220	0046	1+	1	1							NF	
13	0623	0752	0642	1-	1				1				0625	17048
13	1250	1420	1312	3	5	2		5	2	1	10		1249	17044
14	0839	0948	0855	1-	1				1				*	
15	0042	0130	0051	1+	1						1		NF	
15	1546	1627	1552	1-	1				1		1		1546	17056
16	0243	0305	0250	1-	3	1			2				0241	17048
16	0312E	0351	0330	1-	1				1				*	
16	0428	0450	0431	1-	1						1		*	
16	1231	1242D	1242	1-	3			3	1		1		*	
16	1254	1338	1258	1-	3				1		1		*	
16	1934	2006	1941	1-	5				1		7		*	
17	1338	1449	1348	1-	1				1				NF	
17	1902	1935	1902D	2	3						5		1859	17054
18	0153	0216	0200	1-	1				1				0154	17054
18	1046	1124	1054	1-	1				1		1		*	
18	1246	13010	1301	1-	1				1				1248	17054
18	1334	1427	1345	1-	1				1				1331	17058
18	2329	0005	2337	1-	1	1							*	
19	0342	0400	0346	1-	1				1				NF	
19	0423	0505	0435	1-	1	1							*	
19	1525	1615	1533	2+	3						3		1524	17062
19	2229	2315	2233	1-	1						1		2229	17062
20	0000	0056	0016	1-	1				1				*	

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1980

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
21	1149	1204D	1204	1-	1				1				*	
21	1313	1321D	1321	1-	1				1		1		1310	17123
21	1344	1440	1358	2+	5	2			2		6		1344	17062
21	1855	2019	1909	1	5	1		1	3		11		1855	17062
21	2016E	2055	2026	1-	3				1		1		2002	17062
21	2308	0012D	2310	1-	1	1							NF	
21	2348	0054	2354	1-	5	1			2		3		*	
22	0044	0115D	0053	1-	1	1							NF	
22	0348	0414	0353	1-	3				2				NF	
22	0516	0716	0529	2+	5	1			2		1		*	
22	0828	0905	0833	2+	5	1		1	2		2		0832E	17069
22	1129	1140	1133	1-	3				1	1	1		*	
22	1400	1500	1400D	1-	3	1			1		1		*	
22	1418	1440	1426	1	5			1	1	1	4		1417	17069
22	1653	1721D	1705	1-	3						3		1644	17069
22	1715	1815	1745	2+	3						4		1714	17053
22	2126	2248	2135	1	5	1			2		5		2124	17069
23	0001	0055	0012	1-	3				2		1		0000	17069
23	0444	0516	0449	1-	3				2				*	
23	1049	1115	1056	1-	5	1		5	1	1	1		1052	17070
23	1156	1212D	1212	2+	5	1		5		2	2		1201	17070
23	1252	1325	1300	1	5	1			2		3		*	
23	1451	1510	1454	1	5	1			2		3		1450	17062
23	1729	1751	1732	1-	1				1		1		1722	17062
23	1820	1938	1834	1-	5	1		1			8		1817	17062
23	2047	2120	2054	1-	5				1		5		2047	17062
23	2128	2254	2140	1	5				1		5		2126	17062
24	0424	0511D	0440	1	1				1				*	
24	0511E	0647D	0536	2+	3	1			3		1		NF	
24	0825	0930	0838	3	5	2		1	2		2		0830E	17070
24	1358	1445	1404	1-	3				2		1		NF	
24	1607	1620D	1620	2	5	4		2	2		8		1606	17062
24	1648	1754	1654	1-	3				1		4		NF	
24	1701	1737	1703	1+	3						4		NF	
24	1824	1837D	1837	1-	3				1		5		1824	17062
24	1946	2055	1954	1-	3	1			1		5		1947	17062
24	2207	2324	2212	1-	3				1		4		2207	17062
25	0132	0213	0142	1-	3				2		1		0131	17062
25	0218	0324	0228	1	3				1		1		*	
25	0448	0542	0458	1-	3				2				*	
25	0633	0733	0639	1	5	1			3		2		*	
25	1235	1315	1315	2+	3	1			1		1		*	
25	1257	1410	1310	2+	5			4			4		1257E	17076
25	1415	1435	1418	1-	5	1		3	2		4		*	
25	1458	1603	1506	1-	5	1		4	2		6		1459	17062
25	1754	1839	1803	1-	5	1			1		6		1746	17076
25	1853	1935	1855	2	3						5		1852	17062
25	2007	2054	2011	1-	5	1			1		6		2006	17062
25	2058	2112	2104	1-	3				1		2		2058	17062
25	2138	2317	2210	1-	3				1		1		2135	17062
25	2343	0008	2347	1-	1				1				*	
26	0011	0058D	0025	1-	3				1		1		*	
26	0109	0149	0114	1	3				1		2		NF	
26	0246	0317	0253	1-	1				2				NF	
26	0355	0444	0412	1-	1				1				0355	17076
26	0541	0751	0602	2	3	2			2		1		NF	
26	0818	0840	0828	1-	3	2			2		1		0816	17062
26	1345	1445	1415	2	5	1		3	2		2		1345	17062
26	1536	1616	1545	2	3			4			5		*	
26	1845	1925	1858	1	3						5		*	
26	2157	2244	2200	1-	3				1		2		*	
27	0234	0308	0244	1-	1	1			1				*	
27	0819	0838	0826	1-	3			1	1		1		NF	
27	1138	1235	1203	2	3	1			1	1	2		1139	17062
27	1322	1445	1340	3	5	2		4	1	1	9		1332E	17089
27	1614	1658	1621	1-	3				1		4		NF	
28	0027	0130	0042	1-	1				1				*	
28	0051E	0120	0058	1-	3				1	1			*	
28	0548	0617	0551	1-	3				2				*	
28	1420	1446	1428	1	3			2					1418	17123
28	1555	1700	1615	1-	3				1		3		1548	17089

SUDDEN IONOSPHERIC DISTURBANCES

AUGUST 1980

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
29	0323	0350	0327	1-	3				2				*	
29	0611	0700	0627	1-	3				2				NF	
29	0856	0943	0904	2	3			3					*	
29	1504	1552	1530	2	3			3					*	
29	1654	1727	1700	1-	1				1				*	
29	2348	0033	2353	1-	1				1				NF	
30	0304	0324	0308	1-	1				1				NF	
30	0415	0445	0421	1-	1				1				NF	
30	0806	0900	0816	2	5	2		4	2		2		0805E	17098
30	1236	1330	1256	2+	5	1		1	2		8		1242E	17098
30	1352	1503	1405	1-	3				1		3		1353	17098
30	1417	1455	1429	2	3			3					NF	
31	0010	0038	0020	1-	3	1			1		1		NF	
31	0926E	1018	0932	1-	5	1		2	1	1	1		0924E	17098
31	1250	1255D	1255	2+	5	2		1	1	1	5		1249	17098
31	1327	1437	1343	3	5	2		4	1	1	7		1325	17089

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) AND STATION		DATE	TIME (UT) AND STATION	
01-20	0000-2400	A-26	12	1000-1345	UM
05	1005-1345	UM	19	1000-2115	UM
07	0000-0735	KA	26	1005-1330	UM
11	0733-0908	UM	19-31	0000-2400	A-32

STATIONS REPORTING FOR AUGUST 1980:

AAVSO (A01, A05, A19, A26, A31, A32, A48, A50, A51, A52)	SES	Maui, Hawaii, USA	SWF
Glenorchy, Tasmania, Australia	SWF	Panska Ves, Czechoslovakia	SWF, SEA, SES
Hiraiso, Japan	SWF	Preston, UK	SEA
Hobart, Tasmania, Australia	SEA	Sao Paulo, Brasil	SPA, SES
Huancayo, Peru	SWF	Sofia, Bulgaria	SES
Inubo, Japan	SPA	St. Cloud, Minnesota, USA	SES
Juliusruh, GDR	SWF	Trenton, New Jersey, USA	SES
Kasugai, Japan	SPA	Upice, Czechoslovakia	SEA
Kuhlungsborn, GDR	SEA, SPA	Vsetin, Czechoslovakia	SEA
		Zilina, Czechoslovakia	SEA

SIDs BY HALE REGION

AUGUST 1980

DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REGION																															
17034									1																						
17044									1				1																		
17048													1			1															
17051										1																					
17052										1																					
17053																						1									
17054																	1	2													
17055												1																			
17056															1																
17058																		1													
17062																			2		3		5	4	6	2	1				
17069																						4	1								
17070																							2	1							
17076																									2	1					
17089																											1	1			1
17098																														3	2
17123																					1							1			
NO FLARE	1			1	1	1	3	2		2	1	1	1				1		1		1	2		3		2	2		2	3	1
NO FLARE PATROL	1			1	1	4	3	2		2	1	2		1		5		2	1	1	2	3	2	1	5	4	1	3	4		
EVENT TOTALS									2	2		1	2		1	1	1	3	2		4	5	8	5	8	3	2	2		3	3

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
01	0000	0738	CULG				0018	0018.5	1				IIIG
	0415	0445	BLEN										
			CULG				0439						IIIB,W
			CULG	0537	0537.5	1							IIIG
			CULG	0537	0540								IIIN,W
			CULG	0628	0639								IN,W
	0728	1703	BLEN										
	0437	1535	WEIS				1046.3	1048.9	1				IIIG
			WEIS				1149.7	1150.1	1				IIIG
			WEIS				1215.4	1215.7	1				IIIG
			WEIS				1222.4	1222.6	1				IIIG
			WEIS				1337.6	1337.7	1				IIIB
	1531	1819	WEIS										
	1726	1854	BLEN										
	1246	2245	HARV				2021	2022	1				IIIB,W
	2038	2234	CULG	2227	2227.5								I,W
	2333	2400	CULG										
02	0000	0739	CULG	0056	0059								I,W
			CULG				0057	0108					IIIS,W
			CULG	0341	0425								IN,W
			CULG				0353	0356					IIIGG,W
	0416	1543	BLEN										
	0438	1232	WEIS										
	1246	2340	HARV				1728		2	1728		2	IIIG
			HARV				1754	1755	1	1754	1755	1	IIIG,W
			HARV	1759	1800	1	1759	1800	3	1800		3	IIIGG
			PALE				1759.9	1800.6	2				III
	2038	2206	CULG										
	2228	2400	CULG										
03			PALE				0152.6	0153.1	1				V
			LEAR				0152.8	0153.2	1				V
	0000	0716	CULG	0153		1	0152.5	0153.5	1	0152.5	0153.5	1	IIIG
			CULG				0207	0207.5	2	0207	0207.5	2	IIIB
			PALE				0207.1	0207.3	1				III
			LEAR				0207.1	0207.3	1				III
			CULG				0520.5	0521.5					IIIG,W
			CULG				0522.5	0523	2				IIIG,U
			CULG				0559.5		1				IIIB
			LEAR				0559.7	0559.9	1				III
	0725	0738	CULG										
	1246	2240	HARV				1704		1	1704		1	IIIG,W
	2038	2400	CULG				2240.5		2				IIIB
			CULG				2241	2307					IIIN,W
04	0000	0738	CULG				0034	0034.5		0034			IIIG,W
			CULG				0044.5						IIIB,W
			CULG				0100.5		2	0100.5	0101	2	IIIB
			LEAR				0100.6	0100.9	1				III
			PALE				0100.6	0100.8	1				III
			CULG				0335.5	0338.5					IIIGG,W
			LEAR				0335.7	0340.1	1				CONT
			CULG				0337.5		1				IIIB
			CULG				0339	0356					IIIN,W
			PALE				0356.1	0357.1	1				V
			CULG				0356.5	0357	2	0356.5	0357	1	IIIG
	0655	1457	WEIS				0758.8	0759.9	2				IIIG
			LEAR				0800.1	0800.3	1				III
			WEIS				0926.7	0927.1	2				IIIG
			WEIS				1335.0	1335.4	1				IIIG
	1246	2245	HARV				1728		1				IIIG
	2038	2400	CULG				2106	2106.5					IIIG,W
05			LEAR				0140.3	0140.6	1				V
	0000	0738	CULG				0141		2				IIIB
			PALE				0141.3	0141.5	1				III
			CULG				0216.5						IIIB,W
			CULG				0410	0410.5					IIIG,U,W
			CULG				0655	0655.5	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
05			LEAR				0655.1	0655.6	1				CONT
	0514	1610	WEIS				0655.2	0655.6	1				IIIG
			WEIS				0749.7	0750.1	1				IIIB,U
			WEIS				0926.1	0926.6	1				IIIG
	1246	2245	HARV										
			WEIS				1419.4	1420.3	1				IIIG
			PALE				1930.4	1934.3	1				CONT
	2038	2400	CULG				2149		1				IIIB
			CULG				2152.5	2153					IIIG,W
			CULG				2246	2246.5					IIIG,W
			CULG				2248		1				IIIB
			CULG				2248	2249.5					IIIG,W
			PALE				2308.4	2311.3	1				V
			CULG				2308.5		2	2308.5	2309	1	IIIB
			CULG				2309	2312	1	2310.5	2311.5	1	IIIG,V
06	0000	0738	CULG				0012	0012.5					IIIG,W
			CULG				0132.5	0135	1				IIIGG
			PALE				0132.9	0133.5	1				CONT
			CULG				0135.5	0136					IIIG,W
			CULG				0637.5	0640	1				IIIG
	0517	1811	WEIS				0638.6	0639.9	1				IIIG,U
			CULG				0711.5						IIIB,W
			WEIS				1131.3	1131.5	1				IIIG
			WEIS				1141.3	1141.5	2				IIIG
			WEIS				1556.2	1557.3	1				IIIG
	1246	2245	HARV				1636		1				IIIB,W
			WEIS				1636.3	1636.5	1				IIIG
			HARV				1643	2111	1				IN,W
			PALE				1941.2	0141.3	1				III
	2038	2400	CULG				2048	2124	1				IS
			CULG				2050	2150					IIIS,W
			CULG				2124	2204					IS,W
			CULG				2150	2322					IIIN,W
			CULG				2210.5		2				IIIB
			HARV				2211		2				IIIB
07	0000	0738	CULG				0107		1				IIIB
			LEAR				0107.2	0107.4	1				III
			CULG				0110.5						IIIB,W
			CULG	0427	0738								IN,W
			LEAR				0723.7	0724.3	1				CONT
	0446	1811	WEIS				0723.8	0724.4	1				IIIG,U
			CULG				0724	0724.5					IIIG,W
			WEIS				1137.6	1137.7	1				IIIB
	1246	2245	HARV				1252	2245	1				I
			WEIS				1301.3	1301.5	1				IIIG
			HARV				1402	1403	2				IIIG
			WEIS				1402.4	1402.6	2				IIIG
			HARV				1456	1457	1				IIIG,W
			HARV				1817	1822	2	1818	1822	1	IIIG
			PALE				1817.5	1822.0	2				CONT
			HARV				2005	2006	2				IIIG
			PALE				2005.0	2006.2	2				CONT
	2038	2400	CULG	2045	2145	1							IS
			CULG				2116	2235					IIIN,W
			CULG				2131	2222					IS,W
			CULG				2140.5	2141	2				IIIB
			PALE				2140.9	2141.2	2				V
			HARV				2141		2				IIIB
			CULG	2145	2400								IS,W
			PALE				2349.4	2350.7	2				CONT
			LEAR				2349.7	2350.6	1				CONT
			CULG	2350	2350.5	2	2349.5	2351	2				IIIG
08	0000	0738	CULG	0000	0510								IS,W
			CULG				0019.5		1				IIIB
			CULG				0049	0556					IS,W
			CULG				0159	0451					IIIN,W
	0447	0549	WEIS										

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
08			CULG				0707	0708	1				IIIG
	0710	1818	WEIS				1147.6	1147.9	1				IIIG
			WEIS				1231.2	1231.5	1				IIIB
	1246	2245	HARV				1317	1427	1				IN,W
			HARV				1728	2131	1				IN,W
	2040	2400	CULG										
			CULG				2057	2144					IS,W
			CULG				2106	2118					IIIN,W
			LEAR				2349.7	2350.6	1				CONT
09	0000	0738	CULG										
	0440	1351	WEIS				1035.4	1035.7	1				IIIB
	1246	2245	HARV	1247	2245	1	1247	2245	1				I
	1355	1817	WEIS				1510.1	1510.3	1				IIIB
			WEIS				1513.5	1514.7	1				IIIG
			HARV	1554	1555	1	1554	1555	1				IIIG
			WEIS				1645.3	1645.8	1				IIIG
			HARV	1725		2							IIIG
			WEIS				1727.8	1728.0	2				IIIG
			HARV				1728		2	1728		2	IIIG
			PALE				1928.3	1928.6	1				III
			HARV	2042	2043	1							IIIG
	2038	2400	CULG	2045	2400								IN,W
			CULG				2106	2400					IIIN,W
			CULG				2106	2400					IS,W
			CULG				2210.5	2211	1				IIIG
			CULG	2332.5	2333	2							IIIG
			PALE				2341.3	2343.2	1				CONT
			LEAR				2341.3	2349.7	1				CONT
			CULG				2341.5		2	2341.5		1	IIIB
			CULG				2342.5		1	2342.5		1	IIIB
			CULG	2349	2349.5	2	2349	2349.5	3	2349	2350	3	IIIG,V
			PALE				2349.2	2351.2	3				V
10	0000	0737	CULG				0000	0225					IS,W
			CULG				0014	0030					IIIS,W
			CULG	0021	0056		0030	0431					IIIN,W
			CULG	0129	0737								IN,W
			CULG	0305	0307.5								IIIN,W
			CULG				0355	0436					IS,W
			CULG	0404.5	0405								IIIG,W
			CULG	0528	0530.5	2							IIIN
			CULG	0626	0627								IIIN,W
			CULG				0646	0728	1				IS,DC
			CULG				0648	0720	1				IIIS
	0441	0714	WEIS				0652.0	0714	1				IIIN
			CULG	0657		3							IIIB
			WEIS				0657.2	0657.3	2				IIIB
			LEAR				0714.0	0714.5	1				V
			CULG	0714.5	0715.5	1							IIIG
	0756	1816	WEIS				1104.9	1106.4	1				IIIG
			WEIS	1238.1	1238.4	2							IIIG
			WEIS				1243.6	1250.6	3				IIIGG
			WEIS				1254.2	1256.1	1				IIIG
	1246	2245	HARV	1305		2							IIIG
			HARV				1308	2240	1				IN
			HARV	1529		3	1529		2				IIIG
			WEIS				1743.9	1744.2	2				IIIG
			HARV				1744		3	1744		2	IIIG
			HARV	1815		1	1815	1816	2	1815	1816	2	IIIG
			HARV				1820		3				IIIG
			HARV				1857		2				IIIG
	2038	2245	CULG				2046	2230					IS,W
			CULG				2050	2139					IIIS,W
			CULG				2059.5	2105	3				IIIGG
			PALE				2059.8	2105.6	3				CONT
			HARV				2100	2105	3	2100	2105	3	IIIGG
			SGMR				2100.9	2104.1	1				CONT
			PALE				2130.2	2131.0	2				V
			CULG				2133	2137	1				IIIS

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
10			PALE				2133.4	2133.6	1				III
			HARV				2134	2136	2				IIIG,W
			CULG	2233	2233.5	1	2233	2234	2				IIIG,U
			HARV				2233		3			3	IIIG
	2245	2400	CULG				2330	2332.5	2	2331.5	2332	1	IIIG
			PALE				2330.6	2351.6	2				CONT
11			PALE				0023.2	0031.2	2				CONT
	0000	0726	CULG				0026	0026.5	2				IIIG
			CULG				0028	0051	1				IIIN
			LEAR				0049.9	0139.0	1				S
			CULG				0051	0120	1				IIIS
			CULG	0051	0105	1	0057	0105	1			IV	
			CULG				0106	0135	2			II	
			CULG				0106	0107	2				UNCLF
			LEAR				0108.2	0120.0	1			II	
			CULG				0111.5	0112	2				UNCLF
			CULG				0205.5	0207	2	0206	0207	1	IIIG
			PALE				0206.0	0207.2	2				V
			LEAR				0206.0	0207.1	1				V
			CULG				0212	0659					IIIN,W
			LEAR				0223.5	0223.9	1				V
			CULG				0223.5		1	0223.5		1	IIIB
			CULG				0228	0229.5	1				IIIG
			LEAR				0228.2	0229.0	1				CONT
			CULG				0418	0419	1				IIIG
			LEAR				0418.4	0418.9	1				III
	0442	0722	WEIS				0625.4	0625.7	2				IIIG
			LEAR				0625.5	0626.6	1				V
			CULG				0625.5	0626.5	2				IIIG
			CULG				0649.5	0653.5	1			II	
			LEAR				0649.7	0654.2	1			II	
			CULG				0654	0657	2				IIIG
			LEAR				0654.2	0705.2	1				S
			WEIS				0654.2	0656.8	3				IIIG
			WEIS				0658.7	0658.9	1				IIIB
			WEIS				0704.4	0709.0	1				IIIG
			WEIS				0712.8	0712.9	1				IIIB
	0726	0854	WEIS										
	0930	1815	WEIS				1034.8	1035.3	1				IIIG
			WEIS				1037.5	1037.6	1				IIIB
			WEIS				1052.1	1056.6	2				IIIGG
			WEIS				1101.4	1101.6	2				IIIG
			WEIS				1248.3	1251.1	2				IIIGG
	1246	2245	HARV	1453	1454	1							IIIG,W
			WEIS				1751.6	1751.7	1				IIIB
			HARV	1918	1919	2	1918	1919	1				IIIG
			HARV	1924		1							IIIG
	2149	2400	CULG				2344.5		1				IIIB
			PALE				2344.9	2345.0	1				III
12	0000	0737	CULG				0018.5						IIIB,W
			CULG				0216						IIIB,W
			CULG				0542	0721					IIIN,W
	0444	1813	WEIS				0542.1	0544	1				IIIG
			LEAR				0542.1	0542.3	1				III
			CULG				0551	0551.5	1				IIIG
			WEIS				0551.2	0551.5	2				IIIG
			CULG				0604	0616	1				IS,DC
			WEIS				0604.1	0607.4	2				IIIGG
			CULG				0605	0605.5	2				IIIG
			WEIS				0614.2	0614.6	1				IIIG
			CULG				0616	0629					IS,W
			WEIS				1107.6	1107.8	1				IIIG
	1246	2245	HARV	1324	1327	3	1324	1327	3				IIIGG
			WEIS				1324.2	1327.2	3				IIIGG
	1435	1815	DWIN										
			HARV				1741		2				IIIG
			HARV				1750		1				IIIB,W
	2037	2400	CULG				2042	2141					IS,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
12			HARV				2113	2141	1				IN
			CULG				2139.5						IIIB,W
			CULG				2337	2338					IIIG,W
			CULG				2340.5						IIIB,W
13	0000	0705	CULG				0046.5	0047.5	1				IIIG
	0455	0635	DWIN										
			CULG				0617.5	0620	2				IIIG,V,U
	0444	1758	WEIS				0617.6	0618.7	2				IIIG
			LEAR				0617.7	0619.6	1				CONT
	0708	0840	DWIN										
	0715	0737	CULG										
	1001	1143	DWIN										
	1213	1800	DWIN	1247	1336	2						IV	F,P
	1245	2240	HARV	1248	1302	3	1248	1308	3			IV	
			WEIS				1249.3	1259.6	2				
			WEIS				1249.4	1451.8	2				IIIG
			HARV				1251	1256	3	1253	1256	3	IIIGG
			WEIS				1251.8	1316.5	3			II	HARM
			HARV				1252	1310	2	1358	1310	2 II	
			WEIS				1252.8	1313.0	3				IIIG/V
			HARV	1319	1340	2							IVN
			SGMR				1353.9	1356.2	3				V
			HARV	1408	1413	2							IVN
			DWIN	1637.7	1638.2	1							IIIG
			WEIS				1655.2	1655.3	1				IIIB
			HARV				1701	1709	2	1701	1709	2	IIIGG
			WEIS				1709.0	1711.6	2				IIIGG
	2037	2400	CULG										
			CULG	2247.5	2248.5		2248	2248.5					IIIG,W
			CULG				2321.5	2322					IIIG,W
			CULG				2323.5	2324.5					IIIG,W
14	0000	0737	CULG				0217						IIIB,W
			CULG				0240	0240.5					IIIG,W
			CULG				0241.5						IIIB,W
			CULG				0340	0342					IIIG,W
			LEAR				0341.8	0341.9	1				III
			CULG	0543	0545	2	0543	0615	1			II	
	0457	0826	WEIS				0543.0	0555.0	2			II	HARM
	0630	1800	DWIN										
			CULG				0701	0702.5					IIIG,W
	1045	1757	WEIS										
	1246	2245	HARV				1318		3				IIIG
			HARV				1337	2236	1				IIIN,W
			HARV				1453	1455	1				IW
			HARV	1624		1	1624		1				IIIG,W
	2037	2400	CULG				2124	2252					IIIN,W
			CULG				2236.5		1				IIIB
15	0000	0737	CULG				0207						IIIB,W
			CULG				0224						IIIB,W
			CULG				0229	0229.5					IIIG,W
			CULG	0243									IIIB,W
			CULG				0410	0410.5					IIIG,W
	0455	1755	DWIN										
			CULG	0504	0505	1	0504	0505	2	0504.5	0505	1	IIIG
	0459	1758	WEIS				0504.3	0504.9	2				IIIG
			LEAR				0504.4	0504.7	1				V
			WEIS				0519.4	0520.6	2				IIIG
			LEAR				0519.5	0520.2	1				V
			CULG	0519.5	0520	2	0519.5	0520.5	3				IIIG,V
			CULG				0603	0715					IIIN,W
			WEIS				0612.0	0612.3	1				IIIG
			CULG				0653	0654	2				IIIG,U
			WEIS				0653.0	0653.8	2				IIIG
			CULG				0707		1				IIIB
			WEIS				0707.3	0707.5	2				IIIG
			WEIS				0739.5	0739.6	1				IIIB
			WEIS				0915.7	0916.3	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15			WEIS				0921.4	0921.7	1				IIIG
			WEIS				1409.9	1410.5	1				IIIG
	1246	2245	HARV				1522	1525	1				I
			PALE				2144.5	2147.5	3				V
	2036	2400	CULG	2144.5	2145.5	1	2143	2148	3				IIIGG,U,Z
			HARV				2145	2148	2	2146		1	IIIGG
			CULG				2150	2150.5	2				IIIG
			HARV				2155	2157	1				IIIG,W
			CULG	2155.5			2155.5						IIIB,W
			CULG	2157		1	2157		1				IIIB
16	0000	0736	CULG				0239	0305					IIIN,W
			CULG				0240	0244.5					W,SLODRIFT
	0455	1755	DWIN										
	0457	0522	WEIS										
			CULG				0523	0524	1				IIIB
			LEAR				0523.3	0523.8	1				CONT
			CULG				0649						IIIB,W
			CULG				0653						IIIB,W
	0632	1757	WEIS				1337.3	1337.6	2				IIIG
	1246	2245	HARV	1748	2245	1	1300	2245	1				IN
			HARV				2046		2				IIIG
	2036	2400	CULG	2046.5		2							IIIB
			CULG	2047	2208		2052	2400					IS,W
			CULG				2109	2346					IIIN,W
			CULG				2120.5	2222	1				IIIN
			CULG				2126.5	2127	2				IIIB
			PALE				2126.9	2127.1	2				III
			HARV				2127		2				IIIB
			CULG	2208	2400	1							IS
			PALE				2214.9	2221.8	1				CONT
			CULG				2215	2215.5	1				IIIG
			HARV				2219	2220	2				IIIG
			CULG				2219.5	2220.5	2				IIIB
			CULG				2227	2227.5	2				IIIB
			HARV				2227		2				IIIB
17	0000	0736	CULG	0000	0116	1							IS
			CULG				0000	0335					IS,W
			CULG				0041	0736					IIIN,W
			CULG				0053	0054	3	0053	0054	1	IIIG,V
			LEAR				0053.2	0054.8	2				V
			PALE				0053.2	0056.3	2				CONT
			CULG	0116	0736								IS,W
			LEAR				0129.3	0131.1	1				CONT
			PALE				0129.4	0131.1	1				CONT
			CULG				0129.5		1				IIIB
			PALE				0334.9	0335.6	1				III
			CULG				0335	0736					IN,W
			CULG				0335	0335.5	2	0335.5		1	IIIG
			LEAR				0335.1	0335.6	1				CONT
			CULG				0405.5	0409.5					II W
	0458	1220	WEIS				0748.3	0751.8	2				IIIGG
			WEIS				1040.8	1042.7	2				IIIG
			WEIS				1052.2	1052.4	1				IIIB
			WEIS				1057.9	1059.8	1				IIIG
	1228	1755	WEIS										
	0455	1750	DWIN	1326	1430	2							IV F,ABS
			DWIN	1511	1520	1							IV F
	1246	2245	HARV	1707	2120	1	1248	2120	1				IN
	2036	2400	CULG	2040	2227								IS,W
			HARV	2120	2238	1	2120	2245	2				IN
			CULG				2222	2230					IIIN,W
			CULG				2223	2400					IN,W
			CULG	2227	2400	1							IS,DC
18			CULG				0000	0736					IN,W
	0000	0736	CULG	0000	0730	1							IS
			CULG				0130	0154	1				II
			LEAR				0148.2	0156.2	1				CONT

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
18			CULG				0333.5	0334.5					IIIG,W
	0500	1755	WEIS										
			CULG				0524.5	0525.5	1				IIIG
			LEAR				0524.8	0525.6	1				CONT
			CULG				0547	0548	2				IIIG
	0625	1750	DWIN	1246.5	1251.5	2							IIIGG
	1246	2245	HARV	1248	1249	3							IIIG
			HARV	1343	2221	1	1249	2245	2				IN
			HARV	1506	1508	2	1506	1508	1				IIIG
			DWIN	1506.0	1507.9	1						IV	
			HARV	1711		1	1710	1713	2				IIIG
			DWIN	1711.0	1711.5	1							IIIG
			HARV				1941		2				IIIB
	2036	2400	CULG	2038	2145		2041	2400					IS,W
			CULG				2056	2400					IIIN,W
			CULG	2145	2400	1							IS
19			CULG	0000	0722	1							IS,DC
	0000	0722	CULG				0000	0324					IS,W
			CULG				0000	0626					IIIN,W
			CULG				0324	0342	1				IS
			CULG				0342	0722					IS,W
			CULG	0509		1							IIIB
			CULG				0626	0722					IIIS,W
			CULG	0636.5	0637.5	2	0636.5	0637.5	2				IIIG
	0502	1752	WEIS				0637.9	0638.8	2				IIIG
			CULG	0648.5		1							IIIB
	0700	1750	DWIN										
			WEIS				0715	1715	1				IN
			WEIS				0757	1656	1				IIIN
			WEIS				1032.6	1043.4	3				IIIGG
	1246	2245	HARV	1725	2245	1	1258	2245	1				I
			PALE				2015.8	2016.3	2				V
			HARV	2016		1	2016		3	2016		1	IIIG
	2136	2400	CULG				2152.5						IIIB,W
			HARV	2154	2156	1	2154	2156	2				IIIG
			CULG				2154						IIIB,W
			CULG				2155	2156	2				IIIG,V
			PALE				2155.0	2156.3	2				V
			CULG				2246						IIIB,W
			CULG				2247						IIIB,W
			CULG				2249.5		1				IIIB
20	0000	0751	CULG				0135	0441					IIIN,W
			CULG				0211.5		1				IIIB
			LEAR				0311.3	0311.9	1				V
			CULG				0312		1				IIIB
			CULG				0326.5		1				IIIB
			CULG				0336.5	0337.5	2				IIIG
			LEAR				0422.4	0423.0	1				CONT
			CULG				0423		1				IIIB
			LEAR				0442.2	0446.0	1				CONT
			CULG				0442.5	0446.5	2	0443	0446	1	IIIS
			CULG				0442.5	0525	1				N,RS,DP
			CULG				0446.5	0453					IIIS,W
			LEAR				0452.5	0505.7	1				S
			CULG				0453	0507	2				IIIS
			CULG							0458		1	IIIB
	0500	1755	DWIN										
			CULG				0501	0510	1				IS,DC
	0502	1502	WEIS				0502	1438	2				IIIN
			CULG				0507	0618					IIIN,W
			CULG				0510	0634					IS,W
			LEAR				0523.5	0523.6	1				V
			WEIS				0602	1501	1				IN
			LEAR				0636.7	0637.6	1				CONT
			CULG				0637	0638	1				IIIG
	1246	2245	HARV				1249	1500	2				I
			HARV	1317	2230	1	1306	2230	2				IIIN
			HARV	1448	2139	1	1500	2245	1				IN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
20	1510	1750	WEIS										
			HARV				1909	1910	2				IIIG
	2140	2400	CULG	2143	2327								IS,W
			CULG				2151	2400					IIIN,W
			CULG				2334	2400					IS,W
			CULG				2340	2341	1				IIIG
21	0000	0724	CULG				0000	0353					IIIN,W
			CULG				0035		1				IIIB
			CULG	0222	0407		0100	0650	1				IS,W
			CULG				0227	0242	1				N,DC
			LEAR				0346.6	0806.3	1				B
			CULG				0353	0724					IIIS,W
			CULG				0402	0650	1				N,DC
	0503	1748	WEIS				0503	1650	2				IIIN
			CULG				0606		1				IIIB
			CULG				0612.5		2				IIIB
			CULG				0650	0724	1				IS,DC
			CULG				0655	0724	1				SCINT
	1302	2245	HARV				1304	1745	1				IN
			HARV	1310	1313	2	1310	1313	2				IIIG
			HARV	1331	1332	3	1331	1332	3				IIIG
			HARV				1344		1				IIIB,W
			HARV				1411	1417	2				IIIG
			HARV				1506	1507	2				IIIG
			HARV	1524	1526	2	1524	1526	3				IIIG
			HARV	1650	1652	2	1650	1652	3				IIIGG
	0905	1752	DWIN	1722.3	1722.5	1							IIIG
			HARV	1735	1738	1	1738	1740	1				IIIG
			DWIN	1737.0	1737.1	1							IIIG
			HARV	1741	1744	3	1741	1744	3				IIIG
			DWIN	1742.3	1743.5	2							IIIG
			HARV	1751		3	1751		3				IIIG
			DWIN	1751.0	1751.2	2							IIIG
			HARV	1853	1903	2	1853	1902	3	1857	1902	1	IIIG
			SGMR				1854.9	1857.3	2				III
			PALE				1856.7	1908.7	3				S
			HARV	1857	1900	3	1857	1900	2			IV	
			SGMR				1859.6	1900.9	2				V
			HARV				1901	1908	3			II	
			HARV	1906	2119	1	1906	2245	2				I
			PALE				1914.0	0440.0	1				B
			CULG				2130	2251	1				IS
	2130	2400	CULG				2130	2205	1				IIIS
			CULG				2205	2400	1				IIIN
			CULG				2205	2400					IIIS,W
			LEAR				2328.7	0953.0	1				B
22	0000	0434	CULG				0000	0314					IS,W
			CULG				0000	0434					IIIS,W
			CULG				0026.5	0031	1				DC
			CULG				0032	0033.5	2				IIIG
			LEAR				0302.5	0303.2	2				V
			PALE				0302.6	0303.0	2				III
			CULG				0303	0303.5	3	0303	0303.5	2	IIIB
			CULG				0314	0434	1				IS,DC
	0434	0707	CULG										
			CULG				0434	0603	1				IS
			CULG				0434	0620					IIIS,W
			CULG				0502	0502.5	1				IIIG
			LEAR				0502.2	0502.7	1				V
	0504	0956	WEIS				0504	1739	2				IIIN
	1002	1745	WEIS				0515.1	0517.8	3				IIIGG
			CULG	0515.5	0517.5	1	0515.5	0518	1				IIIG
			LEAR				0517.3	0518.3	1				V
			WEIS				0533	0541	2			II	
			CULG				0533	0540	1			II	
			LEAR				0533.3	0541.0	1			II	
			LEAR				0549.6	0550.1	2				V
			CULG				0550		2				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
22			CULG				0603	0707	1				IV
			CULG				0620	0707	1				IIIS
			LEAR				0620.7	0626.5	1				CONT
			CULG				0621	0623	2				IIIG
			LEAR				0733.3	0734.7	2				V
			WEIS				0826.1	0832.1	3				IIIGG
			LEAR				0826.8	0827.7	1				V
			LEAR				0827.9	0831.7	2				V
			DWIN	0828.0	0830.0	1							IV DCIM
			DWIN	0830.8	0832.5	2							IIIG
			WEIS				1025.1	1025.7	3				IIIG
			WEIS				1124.4	1129.6	3				IIIGG/V
			DWIN	1126.5	1129.8	2							IIIG
			WEIS				1308	1309.6	3				IIIGG
	1255	2245	HARV				1309	2014	1				IIIN
	0505	1750	DWIN	1515.8	0528.2	2							IIIGG
			HARV				1730	1732	2				UNCL
			PALE				1811.6	1811.8	1				III
			HARV				1947	1950	3				IIIG
			HARV				2126	2128	2				IIIG
			PALE				2126.4	2129.6	2				V
	2132	2400	CULG				2136	2140	1				II
			HARV				2139	2143	2				UNCL
			CULG				2144	2400					IIIN,W
			HARV				2243	2244	2				IIIG
			CULG	2244		1	2244		2				IIIB
			CULG				2246	2247	1				IIIG
			CULG				2249		2				IIIB
23	0000	0735	CULG				0008	0722					IIIN,W
			LEAR				0105.0	0954.0	1				B
			CULG				0124	0220					IS,W
			CULG	0145		1							IIIB
			CULG				0246.5		1				IIIB
			CULG				0326		2				IIIB
			CULG				0336.5	0338.5	2				IIIG
			PALE				0338.2	0338.6	1				III
			LEAR				0405.9	0411.8	2				CONT
			CULG				0406	0411.5	2				IIIG
			PALE				0406.0	0407.1	1				CONT
			LEAR				0437.5	0445.5	2				CONT
			CULG				0437.5	0446	2				IIIGG
	0505	1750	DWIN										
			CULG				0611	0614.5	1				IIIG
			CULG				0718	0719	1				IIIG
			CULG				0724.5	0727	1				IIIG
	0845	1748	WEIS				0946.8	0947.5	3				IIIG,U
			WEIS				1018	1618	2				IIIN
			WEIS				1037	1526	2				IN
			WEIS				1341.3	1341.7	2				IIIG
	1301	2245	HARV				1342	1803	1				IIIN
			HARV				1423	1455	1				IN
			WEIS				1546.0	1546.7	2				IIIG
			HARV				2112		1				U
	2159	2320	CULG				2200.5		1				IIIB
			CULG				2228.5		1				IIIB
			CULG				2254		1				IIIB
	2320	2400	CULG				2342						IIIB,W
			CULG				2358						IIIB,W
24	0000	0735	CULG	0035	0036								I,W
			CULG				0039	0735					IIIN,W
			CULG	0040	0040.5								I,W
			CULG				0158	0447					IN,W
	0510	1750	DWIN										
			CULG	0510	0735								IS,W
			WEIS				0911	1529	1				IIIN
	0504	1745	WEIS				0911.4	0913.0	1				IIIG
			WEIS				1134.4	1135.6	2				IIIG
			WEIS				1703.1	1705.3	3				IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
24	1302	2245	HARV				1705		2				IIIG
			HARV				1811		3				IIIG
			HARV				1959	2002	2				IIIG
			PALE				2000.5	2002.9	1				CONT
	2035	2400	CULG				2035	2135					IIIS,W
			CULG	2035	2205		2035	2142					IS,W
			CULG				2135	2400					IIIN,W
			CULG				2142	2302					IN,W
			CULG	2151	2152	1							IIIG
			CULG				2151	2152					IIIG,W
			HARV				2153	2154	1				IIIB,W
			CULG	2153	2153.5	1	2153		1				IIIB
			CULG				2228.5		1				IIIB
			CULG				2253.5	2254.5	1				IIIG
25	0000	0634	CULG	0005	0214								IS,W
			CULG				0012	0608					IIIN,W
			CULG				0025	0124					IS,W
			CULG	0106.5	0109	2	0106.5	0109	3				IIIGG
			LEAR				0107.3	0109.0	2				CONT
			CULG	0109.5	0111	1	0109.5	0111	1				IIIG
			CULG	0400.5	0403	3	0402	0402.5	1				IIIGG
			CULG	0406	0406.5	1							IIIG
			CULG	0416.5		1	0416.5		1				IIIB,Z
			LEAR				0416.7	0416.9	1				III
			CULG				0421	0429					IS,W
			CULG	0554	0555	2							IIIG
			CULG	0555	0602	1							IIIN
	0617	1743	WEIS				0704	1722	2				IIIN
			LEAR				0753.8	0800.7	1				CONT
	0707	1740	DWIN	0758.5	0802.0	1						IV	
			LEAR				0924.2	0925.0	1				CONT
			WEIS				1016.6	1021.2	2				IIIG
			DWIN	1016.6	1017.0	1							IIIG
			DWIN	1019.6	1021.0	1							IIIG
			WEIS				1251.6	1253.5	2				IIIG
	1302	2245	HARV				1336	1337	1				IIIG
			HARV				1349	1351	2				IIIG
			WEIS				1350.9	1351.8	2				IIIG
			WEIS	1445.2	1446.4	1							IIIG
			DWIN	1445.5	1447.0	2							IIIG
			DWIN	1458.6	1458.8	2							IIIG
			DWIN	1511.8	1513.5	2							IIIG
			DWIN	1544.2	1548.2	2							IIIG
			HARV				1554	1559	2				IIIG
			HARV				1629		2				IIIG
			PALE				1719.9	1721.1	1				V
			HARV				1720		2	1720		2	IIIG
			HARV				1836	1838	2				IIIG
			HARV				1859	1914	2			II	
	2035	2400	CULG				2046	2400					IIIN,W
			CULG				2153		2				IIIB
			HARV				2153		2				IIIB
			CULG	2247	2400		2247	2400					IN,W
			CULG	2253		1							IIIB
26	0000	0003	CULG				0001						IIIB,W
	0058	0734	CULG				0058	0734					IIIN,W
			CULG	0115	0116	1							IIIG
			CULG				0117		1				IIIB
			CULG				0132						IIIB,U,W
			CULG	0209	0734								IN,W
			LEAR				0400.5	0400.7	1				III
			CULG	0408.5	0409								IIIG,W
			CULG	0415.5	0416	2	0415.5	0416	2				IIIG
			LEAR				0415.8	0419.4	2				CONT
			CULG	0417.5	0418.5	2	0418	0419	3	0418.5	0419	1	IIIG
			CULG	0419	0419.5	2	0419.5		1				IIIG
			CULG				0433	0734					IN,W
			CULG	0442.5	0443	1							IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
26			CULG	0444	0444.5	1							IIIG
	0510	1745	DWIN										
			CULG				0533.5	0536.5	1				IIIG
			LEAR				0533.9	0539.1	1				CONT
			CULG				0723		1				IIIB
			LEAR				0723.1	0723.4	1				III
	0620	1743	WEIS				0723.5	0723.6	1				IIIB
			WEIS				0830.8	0831.0	2				IIIG
			WEIS				1045.7	1052.2	2				IIIGG
			WEIS				1253.0	1257.8	2				IIIGG
			WEIS				1305.3	1305.5	2				IIIG
			WEIS				1318.7	1318.9	1				IIIB
			WEIS				1427.5	1432.3	2				IIIGG
	1302	1650	HARV				1428	1431	1				IIIG
	2021	2245	HARV										
	2034	2400	CULG										
			CULG	2037	2400		2040	2247					IN,W
			CULG				2044		1				IIIB
			CULG				2050	2400					IIIN,W
			CULG				2118		1				IIIB
			CULG				2147		1				IIIB
27			CULG	0000	0733								IN,W
	0000	0733	CULG				0000	0017					IS,W
			CULG				0017	0044	1				IS
			CULG				0044	0145					IS,W
			CULG				0124	0139	1				IIIS
			LEAR				0125.7	0139.2	1				S
			CULG				0128.5	0129.5	2	0128.5	0129	2	IIIG
			CULG				0134.5	0135	2	0134.5	0135	1	IIIG
			CULG				0205.5						IIIB,W
			CULG				0410.5	0411.5					IIIG,W
	0505	1354	WEIS				0604.0	0604.2	1				IIIB
			CULG				0604.5		1				IIIB
			LEAR				0604.7	0604.9	1				III
	0650	1745	DWIN	0813.0	0813.4	2							IIIG
			WEIS				0903.1	0903.2	1				IIIG
	1302	2245	HARV				1524	1601	1				IN,W
			HARV				1724	1727	2				IIIG
	1407	1745	WEIS				1724.7	1727.4	1				IIIG
			HARV	1848		1							IIIG
	2034	2400	CULG				2034	2212	1				IS,DC
			CULG				2034	2220					IIIN,W
			CULG				2212	2400					IS,W
			CULG				2220	2400					IIIS,W
			CULG				2331.5	2332	1				IIIG
			PALE				2331.5	2332.1	1				III
28			CULG				0000	0210					IS,W
			CULG	0000	0733								IN,W
	0000	0733	CULG				0000	0158					IIIN,W
			LEAR				0158.1	0158.3	1				III
			CULG	0246		1							IIIB
			LEAR				0300.3	0300.8	1				V
			CULG				0510	0733					IIIN,W
			CULG				0511.5	0512	1	0511.5	0512	1	IIIG
			LEAR				0511.6	0512.1	1				CONT
			CULG				0531	0532	2	0531.5		2	IIIG
			CULG				0533	0733					IS,W
	0506	1742	WEIS				0610	1725	1				IIIN
			LEAR				0733.6	0734.2	1				CONT
			LEAR				0935.4	0936.1	1				CONT
	0515	1700	DWIN	1154.4	1156.3	2							IIIG
			DWIN	1200.2	1201.0	1							IIIG
	1302	2245	HARV	1504	1505	2							IIIG,U
			HARV				1723	1725	1				IIIG
			HARV	1726	1727	3							IIIG
			HARV				1815	1816	1				IIIB,W
	2033	2400	CULG				2033	2325					IN,W
			CULG				2111	2400					IIIN,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
28			CULG	2225	2235								IN,W
			CULG	2313	2320								IIIN,W
			CULG				2340.5		1				IIIB
29	0000	0733	CULG	0013	0040	1							IIIN
			CULG				0024.5						IIIB,W
			CULG				0123	0300					IS,W
			CULG				0135	0256					IIIS,W
			LEAR				0215.8	0239.7	1				S
			CULG				0228.5	0229.5	3	0228.5	0229	2	IIIG
			CULG				0238.5	0239.5	1				IIIG
			CULG				0256	0733					IIIN,W
			CULG	0335	0733								IN,W
			LEAR				0354.0	0354.7	1				CONT
			CULG	0401.5	0405	2							IIIGG
			CULG	0452	0733	1							IIIN
	0515	1735	DWIN										
			CULG				0616	0733					IS,W
	0507	0855	WEIS				0725.2	0725.3	1				IIIB
			WEIS				0741.6	0741.7	1				IIIB
			WEIS				0805.9	0806.1	2				IIIB
	1303	2245	HARV	1514	1515	2							IIIG
	1121	1740	WEIS				1516.0	1518.4	1				IIIG
			WEIS				1638.3	1638.4	2				IIIB
			HARV				1732	1736	2				IIIG
			HARV				1751	1753	2				IIIG
			PALE				1951.6	1956.1	2				CONT
	2033	2400	CULG	2033	2400		2033	2400					IS,W
			CULG				2035	2400					IIIN,W
			CULG	2132	2310	1							N,DC
			PALE				2132.2	2134.0	1				V
			CULG				2133	2134	3				IIIG
			CULG	2150		1	2150		1				IIIB
			CULG	2301.5		1	2301.5		1				IIIB
			CULG	2304.5									IIIB,W
			CULG	2316.5	2317	1							IIIG
30	0000	0730	CULG	0000	0730		0000	0730					IS,W
			CULG	0047	0055		0000	0730					IIIN,W
			CULG				0050.5	0051	1				IIIG
			LEAR				0117.5	0117.6	1				III
			CULG	0146	0146.5	1							I
			CULG				0236.5	0237.5	1				IIIG
			CULG	0239	0240	2	0239	0240	2				IIIGG,Z
			LEAR				0257.6	0257.7	1				III
			CULG	0313.5	0314	2							UNCLF
			LEAR				0336.9	0337.1	1				III
			CULG	0434	0435		0434	0435					IIIG,W
	0507	1631	WEIS				0509	1625	2				IIIN
			CULG				0724		1				RS,DP
	0520	1600	DWIN	0805.1	0805.3	2							IIIG
			WEIS				1053.4	1056.3	2				IIIGG
			WEIS				1305.6	1305.8	2				IIIG
	1302	2300	HARV				1307	1839	2				IIIN
			WEIS				1355.7	1356.6	2				IIIG
			HARV				1357	1358	2				IIIG
			WEIS				1401.5	1402.7	2				IIIG
			HARV	1403	1404	1	1403	1404	2				IIIG
			WEIS				1438.7	1444.4	2				IIIGG
			HARV	1444	1445	1	1440	1445	2				IIIGG
			PALE				1715.9	1717.1	2				V
			HARV	1716	1717	1	1716	1717	3				IIIG
			PALE				1739.5	1739.8	1				III
			HARV	1740		2	1740		3				IIIG
			PALE				1843.7	1844.0	2				III
			HARV				1844		3				IIIG
	2035	2400	CULG	2035	2400		2035	2110					IS,W
			CULG				2038	2125					IIIS,W
			CULG				2110	2134	1				IS
			CULG				2134	2400					IN,W

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

AUGUST 1980

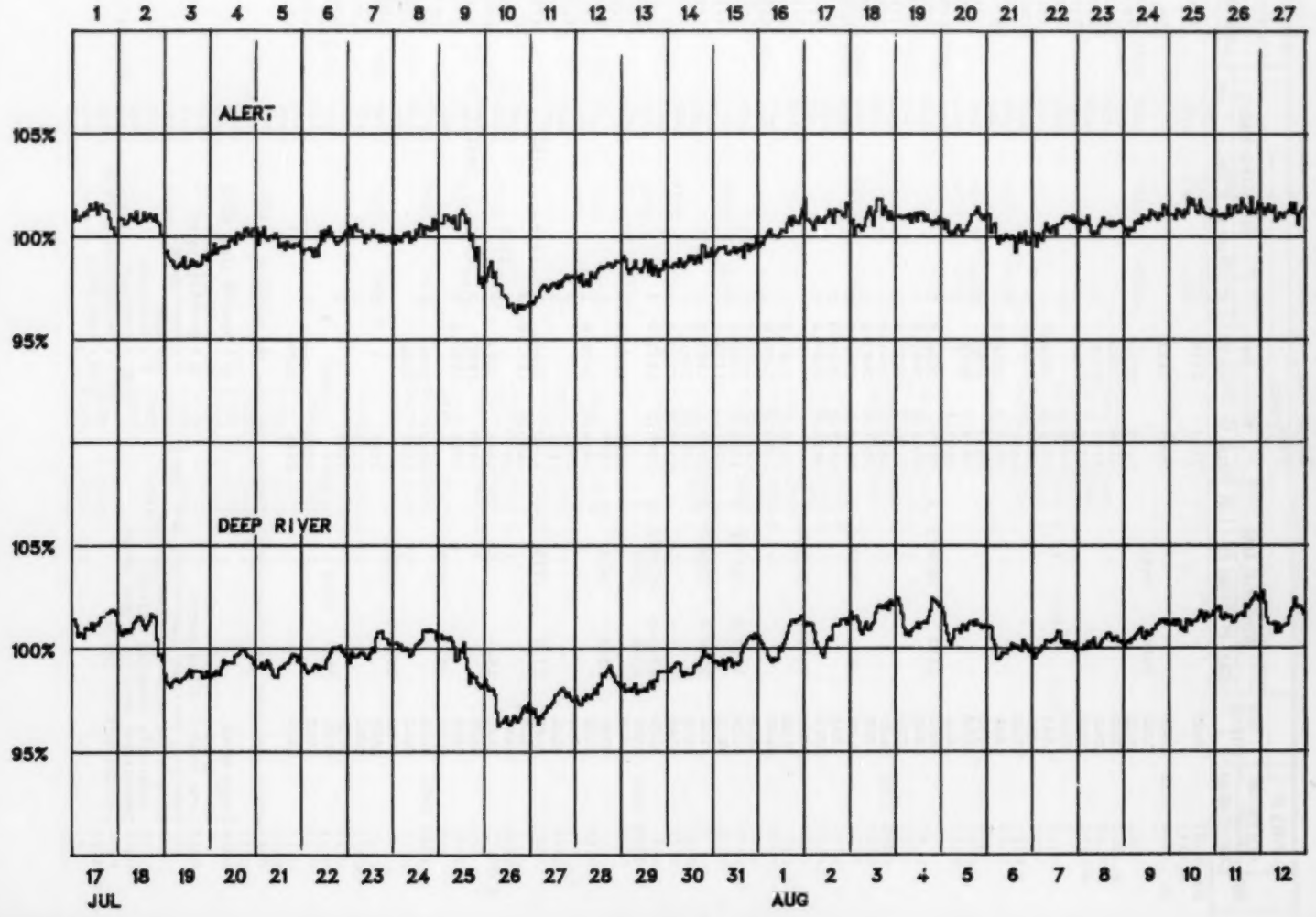
DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
30			CULG				2153	2318					IIIN,W
31	0000	0733	CULG				0000	0132					IN,W
			CULG	0000	0641								IS,W
			CULG				0132	0733					IS,W
			CULG				0136	0733					IIIN,W
			CULG				0155	0336	1				N,DC
			CULG				0312.5	0313	2				IIIG
			CULG				0418.5		1				IIIB
			LEAR				0418.6	0418.7	1				III
			LEAR				0529.2	0535.1	1				CONT
			CULG				0535		1				IIIB
			LEAR				0547.2	0618.0	1				S
	0530	1737	WEIS				0553	1641	2				IIIN
			CULG				0614.5	0615	1				IIIG
			CULG				0617.5		2				IIIB
			CULG	0655	0656.5	2	0655	0656.5	2				IIIG
			LEAR				0655.4	0657.3	1				CONT
			LEAR				0755.3	0755.6	1				III
	0735	1720	BLEN				0822.5	0841.3	1				IIIGG
			LEAR				0837.6	0843.2	1				CONT
			BLEN	0923.2	0927.5	2	0923.2	0927.9	2				IIIGG,RS
			LEAR				0923.2	0929.0	3				V
			WEIS				0923.7	0930.6	3				IIIGG/V
			BLEN	0959.6	0959.8	1							IIIG
			BLEN				1043.2	1045.2	2				IIIG
			BLEN				1205.4	1205.6	1				IIIG
			WEIS				1226.6	1229.4	3				IIIGG/V
			BLEN	1227.5	1227.9	1	1226.6	1228.1	2				IIIGG
			WEIS				1247.3	1252.0	3				IIIGG/V
			BLEN	1248.1	1256.2	3	1248.1	1301.5	3				IIIGG,DCIM
			WEIS				1251.4	1301.7	3				IIIGG/V/GG
			BLEN				1313.7	1720 D	1				I
			BLEN	1325.4	1334.2	2	1325.2	1333.0	3				IIIGG
	1303	2240	HARV	1326	1333	2							IIIGG
			WEIS				1329.3	1331.7	3				IIIGG
			HARV	1332	1416	1	1330		1				IN
			BLEN				1459.4	1459.6	1				IIIG,RS
			HARV				1553		2				IIIG
			HARV				1621		2				IIIG
			HARV	1749	1753	2	1748	1754	3	1749	1750	3	IIIGG,V
			PALE				1836.8	1837.9	3				V
			HARV				1837		3	1837		2	IIIG,V
			HARV	1841		1	1841	1842	2				IIIG
			HARV				1946	1947	2	1946	1947	2	IIIG
			PALE				1946.3	1947.1	2				V
			CULG	2033	2400								IS,W
	2033	2400	CULG				2033	2316	1				IS,DC
			CULG				2132	2400					IIIN,W
			CULG	2150.5	2151.5	1							IIIG
			HARV				2151		2				IIIG
			CULG				2151		2				IIIB
			CULG				2219		2				IIIB
			CULG	55	2256	1	2255	2256	2				IIIG
			CULG				2258		1				IIIB
			CULG				2316	2400					IS,W

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2009 (July 1980–August 1980)

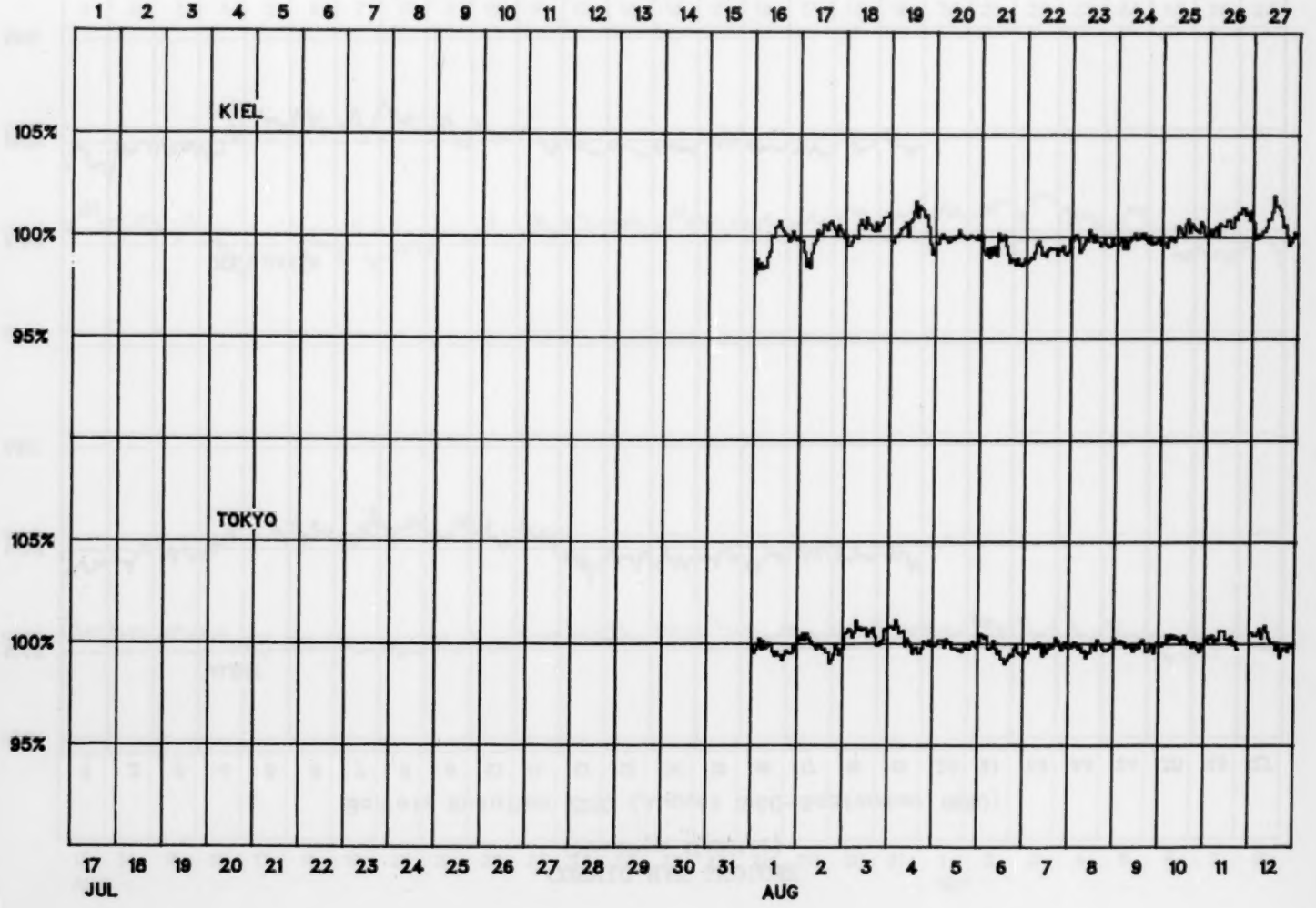


COSMIC RAY INDICES
(Neutron Monitor)

JUL AUG

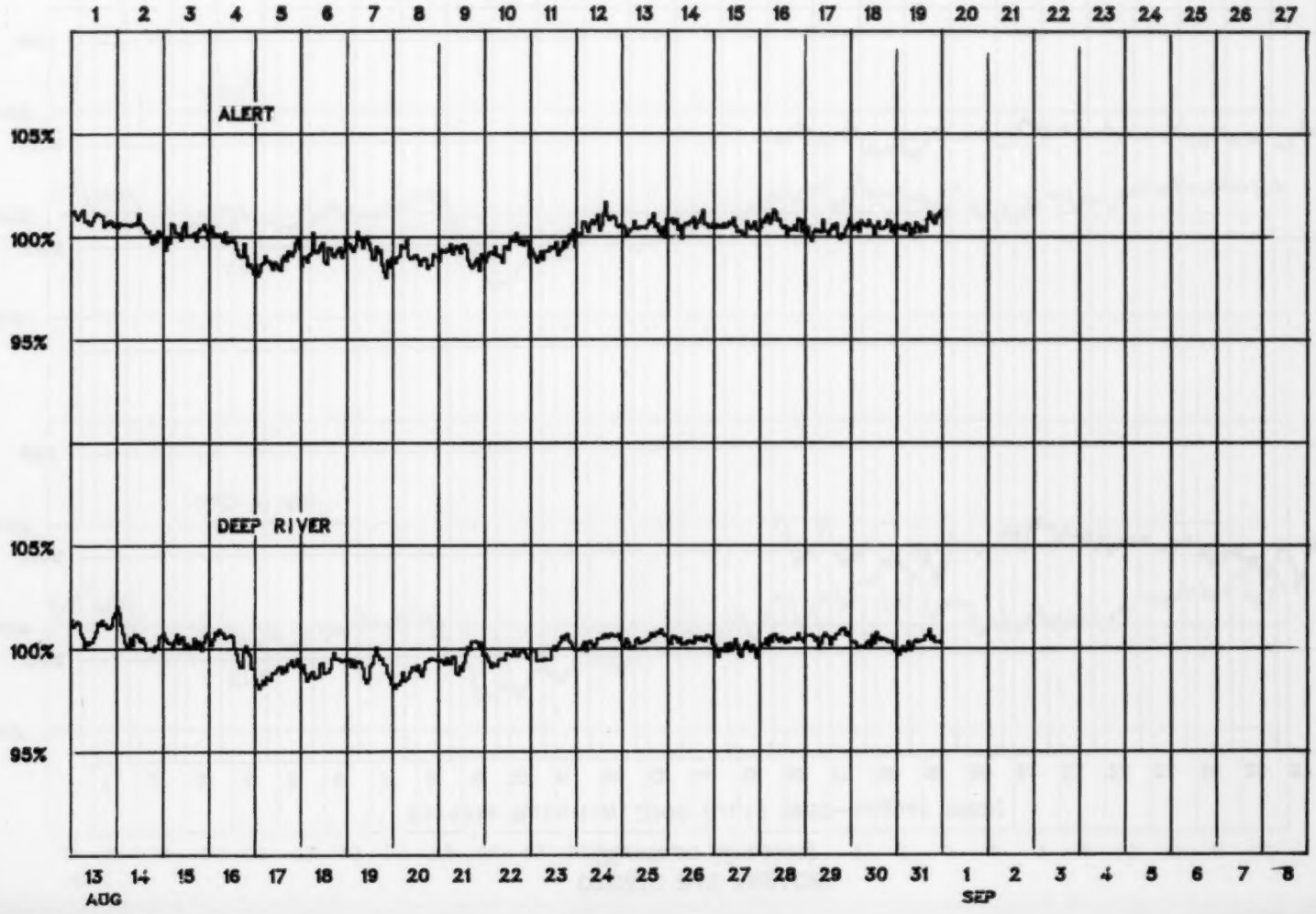
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2009 (July 1980–August 1980)

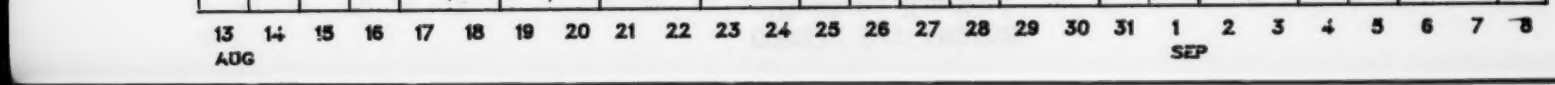


COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2010 (August 1980–September 1980)

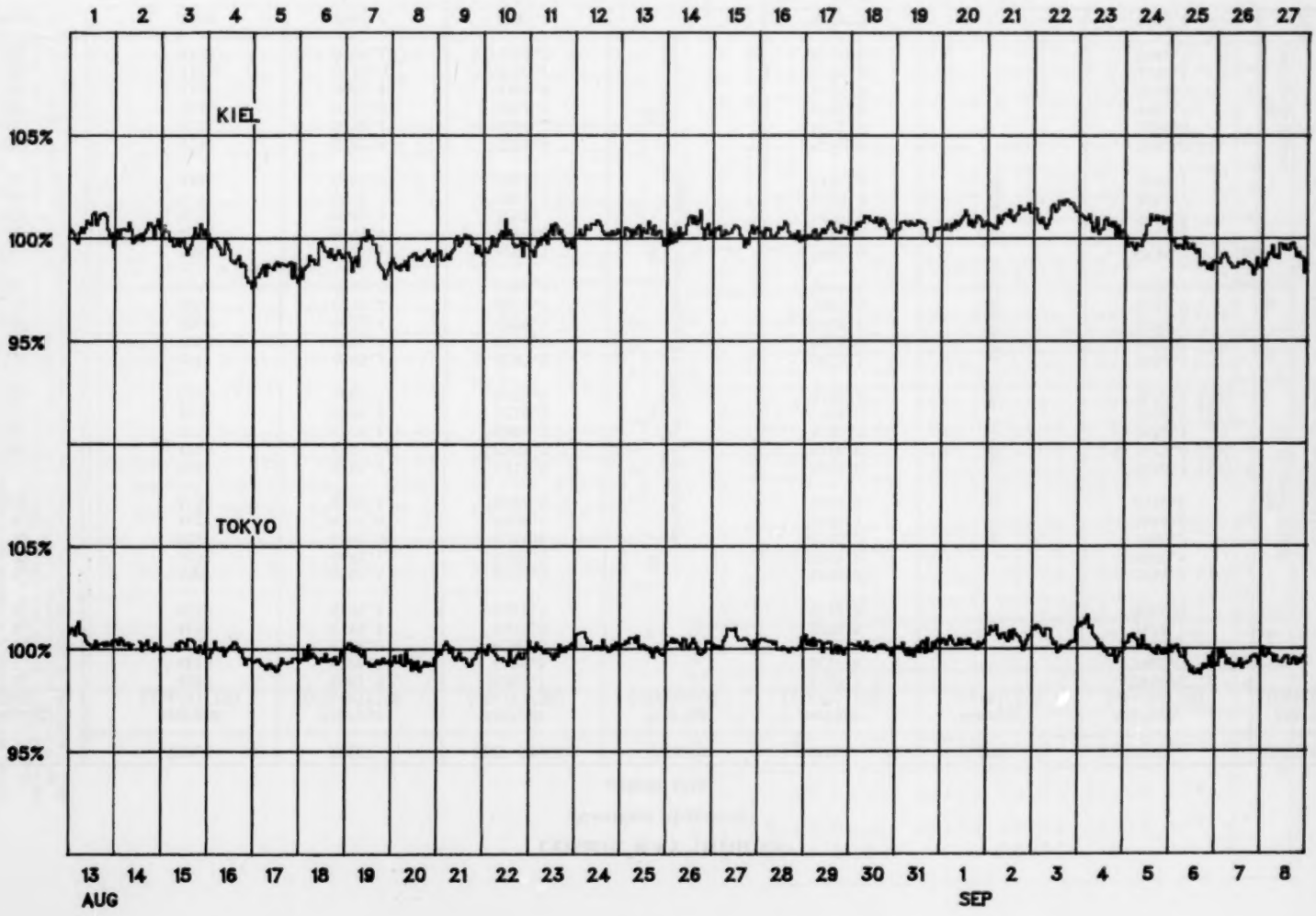


COSMIC RAY INDICES



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2010 (August 1980–September 1980)



COSMIC RAY INDICES

(Neutron Monitors)

AUGUST 1980

August 1980	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	CALGARY Average (cts/h/100	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/100	HUANCAYO Average (cts/h)/100
1	4098	6681.9	6283.7		5718.2		3556.5	
2	4118	6726.1	6306.5		5738.6		3562.8	
3	4135	6724.0	6356.5		5766.3		3585.1	
4	4122	6719.7	6352.0		5770.5		3574.7	
5	4118	6701.7	6321.7		5738.9		3564.0	
6	4087	6662.5	6262.0		5698.7		3556.8	
7	4102	6691.1	6269.3		5701.9		3561.0	
8	4092	6698.3	6275.4		5730.3		3560.2	
9	4121	6715.6	6306.5		5733.7		3564.4	
10	4136	6744.5	6342.0		5754.8		3570.6	
11	4141	6745.2	6371.5		5786.0		3576.3 (18)	
12	4139	6741.5	6355.7		5774.5		3572.0 (23)	
13	4132	6738.7	6346.3		5738.2		3562.3	
14	4106	6706.6	6316.0		5724.8		3552.8 (21)	
15	4103	6689.9	6306.8		5706.3		3550.3 (20)	
16	4077	6649.3	6293.5		5653.7		3540.3	
17	4044	6605.0	6213.1		5618.8		3519.8	
18	4064	6628.4	6228.1		5652.3		3529.6	
19	4060	6632.3	6233.7		5659.8		3532.0	
20	4046	6613.4	6216.8		5647.1		3520.3	
21	4067	6621.1	6262.1		5680.0		3535.2	
22	4091	6641.8	6259.0		5696.5		3533.2	
23	4102	6640.5	6282.		5702.9		3543.9	
24	4135	6724.1	6309.1		5728.4		3554.7	
25	4126	6710.9	6313.8		5721.8		3549.1	
26	4130	6722.8	6310.9		5731.8		3553.0	
27	4131	6710.2	6284.2		5721.5		3560.5	
28	4136	6722.5	6311.7		5721.0		3551.1	
29	4137	6698.4	6322.4		5725.8		3551.0	
30	4143	6713.0	6303.7		5744.2		3548.1	
31	4134	6719.1	6302.0		5736.5		3546.5	
MEAN	4109	6691.6	6297.4		5716.9		3552.6	

Data not available at time of publication.

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

GEOMAGNETIC ACTIVITY INDICES

AUGUST 1980

Day		Three-Hourly Indices Kp									Ap	Cp	Three-Hourly Indices Km								Am	aa			
		1	2	3	4	5	6	7	8	Sum			1	2	3	4	5	6	7	8		N	S	M	
1	Q1	1	2-	1+	1	1	1-	1-	1	8+	4	0.1	1	2-	2-	1	1	1-	1-	1	7	7	5	7	6 CC
2		0+	1-	1-	1	2+	2	3-	3+	13	7	0.4	0+	1-	1	1+	2	2	2+	3	12	16	9	4	21 K
3		4	3+	4	4+	4+	2	3-	1+	26	20	1.0	3+	3	4-	4-	3+	2	2+	1+	31	32	24	36	21
4		2-	2	2+	2	3+	2+	1	0+	15	8	0.4	2-	2-	2+	2-	3-	2	1-	0+	13	17	12	14	16
5	Q2	1+	1-	1	1+	1+	1	1	1+	9	4	0.2	2-	1-	1	2-	2-	1+	1	1	8	10	6	7	9 C
6	D4	4	3	2	3-	5-	3+	4+	3	27	21	1.1	4-	3-	2	3-	4	4-	4-	3	35	45	18	26	38
7		2+	3-	2+	3-	2	2-	3-	3	19+	10	0.6	2-	3-	3-	2+	2+	2-	3-	3	21	25	17	16	27
8	Q3	2-	1	0+	1-	1	1	1-	2	8+	4	0.1	2-	1+	0+	1-	1-	1-	0+	2	7	11	4	5	10 CK
9		1+	1	1	2-	3-	3+	3	2+	16+	9	0.5	1+	1	1+	1+	3-	3-	3-	3-	16	17	11	8	21
10		2+	3	3	2	2+	2+	2-	1	18-	9	0.5	2	3	3+	2	1+	2-	1+	1+	17	21	11	20	13
11		1+	2-	2	1+	1	2	3	3	15+	8	0.4	1+	2-	2-	1+	1-	2-	2+	3-	12	15	10	7	18 K
12		4+	2	2	1-	1+	1	1+	1+	14	8	0.5	4+	2+	2-	1	1	1	1	1	15	19	9	19	9 K
13	Q0	2-	1	1	1	2	2	1+	2	12	6	0.2	2	1+	0+	1-	1+	2-	1	2	9	15	6	7	15 CC
14		1	0+	2	2	2	2+	2-	1	12+	6	0.3	1+	0+	2	2	2-	2-	2-	1	11	12	9	8	13 CC
15	Q3	2-	2	1	2-	2	1+	1	1-	11+	5	0.2	2-	2	1-	1+	2	1+	1-	1-	9	12	8	11	9 CC
16	D3	1	1	1+	1+	5+	6+	4	3-	23	26	1.2	1+	1	1+	1+	5-	5-	4-	2+	31	34	35	9	62
17		1+	1	2-	2+	3-	2	4-	3+	18	10	0.6	1+	1-	1+	2	2+	2-	3+	3+	18	18	16	10	24
18	D5	3	3+	4	5	2+	2	2-	3	24+	18	1.0	3-	3+	4-	4	2+	2-	1+	2+	28	29	23	36	16
19	D1	4	2+	2	3+	5	6-	4	4-	30	29	1.2	4-	2+	2-	3+	4-	4+	3+	3+	37	54	27	21	60
20		2+	1+	1-	3-	2+	3-	4-	3-	18+	10	0.6	2	1	1-	3-	2+	2+	3	3-	17	19	15	11	24
21		3	3-	3-	2-	1+	1	1	1	14+	8	0.4	3-	2+	3	2-	1	1-	1	1+	14	16	8	17	7 C
22		1+	2+	2+	2+	2+	2+	3	3+	19+	10	0.6	1+	3-	3-	2	2	2	3-	3	19	24	14	12	26
23	Q7	2+	1	1	2	1+	1-	1-	0+	9+	5	0.2	2	1+	1	2-	1	0+	0+	0+	7	9	5	9	5 CK
24	Q5	2	2-	1	1-	1+	1	1	0+	9	4	0.2	2-	2	1	1-	1-	1-	1-	1-	7	8	4	8	5 CC
25	Q9K	0+	1-	0+	1-	1+	1+	1	3+	9	5	0.2	0	0+	0+	1-	1	1+	1	3	8	13	5	4	15 KK
26		4	3+	2	2-	2+	1+	2	3+	20	12	0.7	3+	3	2+	2-	2+	2-	2-	3	21	27	14	24	18
27	D2	3+	3+	4-	5	5-	3	3	1+	27+	22	1.1	3	3	4-	4	4	3-	3-	2	34	35	46	47	35
28	Q4	2	2-	1+	1	1-	1+	0+	0+	9-	4	0.1	2-	2-	1+	1	0+	1+	0	0+	7	7	5	8	5 CK
29	Q6K	0+	0+	0	0+	0+	1	2+	3	8-	4	0.2	0+	0	0	0	0	1-	2+	3-	6	9	4	2	10 CC
30		2	2+	2-	1+	1+	2+	2-	1	14-	6	0.3	2-	2+	2-	1	1	2+	1+	1-	11	11	13	10	15 CC
31		3-	2+	2+	2-	2-	1-	1+	2	15-	7	0.4	2+	2	2	1+	1+	1-	1+	2+	13	13	7	11	10 CK
									Mean		10	0.50									16.2	19.3	12.9	16.4	

Day	Three-Hourly Indices Kn								An	Three-Hourly Indices Ks								As
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	
1	1	2-	1+	1	1+	1+	1	1+	8	1	2-	2-	1-	1-	0+	0+	1-	6
2	1-	1-	1	2-	2+	2+	2+	3+	15	0	1	1	1-	1+	2	2+	3-	10
3	3+	3	4	4	4-	2	3-	1+	33	3+	3+	4-	3+	3	2	2	1+	27
4	2	2-	3-	2	3	2	1+	0+	15	2-	1+	2	2-	3-	2-	0+	0+	11
5	2-	1-	1	2-	2-	2-	2-	1+	10	2-	1-	1-	2-	1+	1-	0+	1-	7
6	4-	2+	2+	3	5-	4-	4-	4-	42	4-	3-	4-	2	3	3+	3+	3-	29
7	2	3	3-	3-	3-	2-	3-	3	22	2-	2+	3-	2+	2	1+	2+	3+	20
8	2-	1+	0+	1-	1+	1	1-	2	9	2-	1	0+	0+	0+	0+	0+	2	6
9	1+	1	2-	2-	3	3	3	3-	20	1+	1	1	1-	2-	2	2	2+	11
10	2	3	3+	2+	2	2	2-	1+	19	2	3+	3+	2-	1	1-	1+	1-	16
11	1+	2-	2	2-	1	2	3-	3	15	1	1+	2-	1+	0+	1+	2	2	10
12	4	2	2	1+	1+	1+	1+	1+	17	4+	2+	1	0+	1-	0+	0+	1-	13
13	2	1+	1-	1	2-	2	1+	2	11	2	1+	0+	0	1	1-	0+	2-	7
14	1+	0+	2+	2+	2+	2+	2	1	13	1	1-	2	2-	1	1	1+	1-	8
15	1+	2+	1	2-	2+	2-	1-	1	11	2-	2-	1-	1	2	1	1-	0	9
16	1+	1	1	1+	5-	5-	4-	3-	34	1+	1+	1+	1	4	5-	3+	2	28
17	1+	1-	2-	2+	2+	2	3	4-	19	1+	1-	1	2-	2	2-	4-	3	17
18	3-	3	3+	4	2+	2	2-	3-	27	3-	4-	4	4	2	2-	1+	2	29
19	3+	2	2-	4-	4	5-	4-	4-	41	4-	3-	2-	3	3	4-	3+	3+	33
20	2+	1+	1	3	2+	2+	3	3-	19	2	1	1-	2+	2	2	3-	3-	15
21	3-	2	3-	2	1+	1	1+	1+	15	3-	3-	3+	1+	1-	0+	0+	1	14
22	1+	2+	2+	2	3-	2+	3-	3	20	2-	3-	3-	2	1+	2-	3	3-	19
23	2	1+	1+	2	2-	1-	1-	1-	9	2	1+	1-	1+	1-	0	0	0	6
24	2-	2-	1	1-	1	1+	1-	1-	8	2	2+	1+	0+	0+	0	0+	1-	7
25	0	0+	0+	1	1+	2	1+	3	9	0	1-	0+	0+	1-	1	1-	3	6
26	3	3	2+	2	2+	2	2	3	22	4-	3+	2+	1+	2	1+	1+	3-	20
27	3-	3-	4-	4	4+	3-	3	2-	35	3	3+	4-	4+	4-	2+	3-	2	34
28	2	1+	1+	1+	1-	2-	0+	0+	8	2-	2	1+	1-	0+	1	0	0	6
29	0+	0	0	0	0	1-	3-	3	7	0+	0	0	0	0	0+	2-	2+	5
30	2-	2	2-	1	1	2+	2-	1+	12	2	3-	2-	1+	1	2+	1+	0+	11
31	2	2	2+	1+	1+	1	1+	2+	13	3-	2	2	1+	1+	0+	1+	2	12
								Meon	19.0									14.5

Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alonc are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2 nT) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6", K = "Ap≤6 but one Kp≥30 or two Kp values≥3-"). An asterisk means "not really disturbed" (Ap<20).

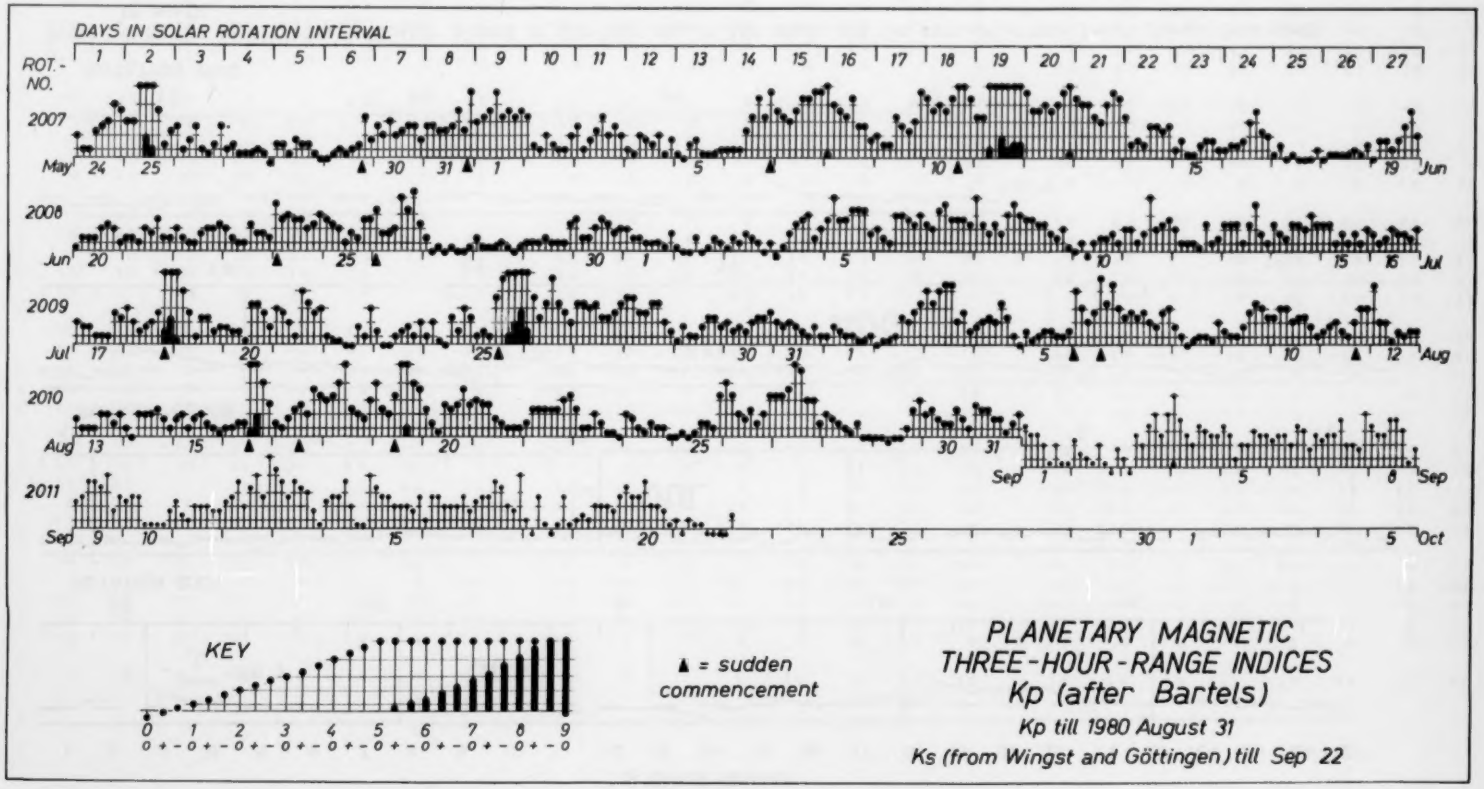
Geomagnetic three-hourly indices Km, Kn, Ks, daily mean values Am, An, As (unit 1nT), and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices daily north (N) and south (S) values, and half-daily antipodal mean (M) values are given. Quiet 24-hour and 48-hour intervals centered on 1200 UT are indicated for really quiet as C and for quiet but with some slightly disturbed three-hour intervals as K. The first hundred years series of aa is in IAGA Bulletin No.33, and complementary data are in IAGA Bulletin No.39.

DAILY AVERAGE INDICES Ap

	1979				1980							
DAY	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
1	10	10	16	9	24	10	3	4	8	22	5	4
2	5	7	12	11	12	9	3	3	4	7	3	7
3	9	13	10	9	18	3	5	7	3	9	4	20
4	10	9	10	16	16	4	5	11	4	5	7	8
5	17	6	2	7	12	3	7	7	7	4	15	4
6	15	36	3	6	8	33	9	28	12	16	10	21
7	6	32	12	4	5	12	7	18	9	27	13	10
8	6	37	14	10	6	17	6	17	7	23	14	4
9	5	23	19	7	3	11	7	20	18	14	8	9
10	9	17	6	5	3	4	4	22	8	33	4	9
11	14	10	10	5	11	4	4	30	38	59	10	8
12	8	8	7	4	4	3	1	28	23	32	5	8
13	8	12	35	4	23	2	7	18	14	27	9	6
14	10	6	13	4	9	18	5	10	17	10	9	6
15	8	8	3	9	6	33	2	20	6	5	6	5
16	14	8	12	10	9	40	4	12	3	9	6	26
17	11	4	8	13	13	6	5	11	3	3	6	10
18	64	3	4	7	4	10	4	4	4	3	30	18
19	6	5	7	6	4	10	10	5	8	8	16	28
20	22	6	10	4	6	6	4	6	5	6	9	10
21	23	10	6	4	6	4	18	5	4	6	14	8
22	6	14	2	15	5	4	16	9	6	6	5	10
23	7	6	4	3	5	9	6	6	11	6	4	5
24	15	12	24	7	5	6	4	7	12	13	7	4
25	19	14	15	2	7	13	6	9	34	8	46	5
26	19	8	4	10	6	14	30	5	7	15	26	12
27	15	6	4	12	24	14	7	5	3	3	15	22
28	16	9	2	16	27	10	7	4	4	3	14	4
29	15	11	4	32	26	7	8	6	6	5	6	4
30	18	5	15	20	10		11	8	10	8	8	6
31		5		9	5		21		16		6	7
MEAN	14	12	10	9	10	11	8	11	10	13	11	10

MEAN	14	12	10	9	10	11	8	11	10	13	11	10

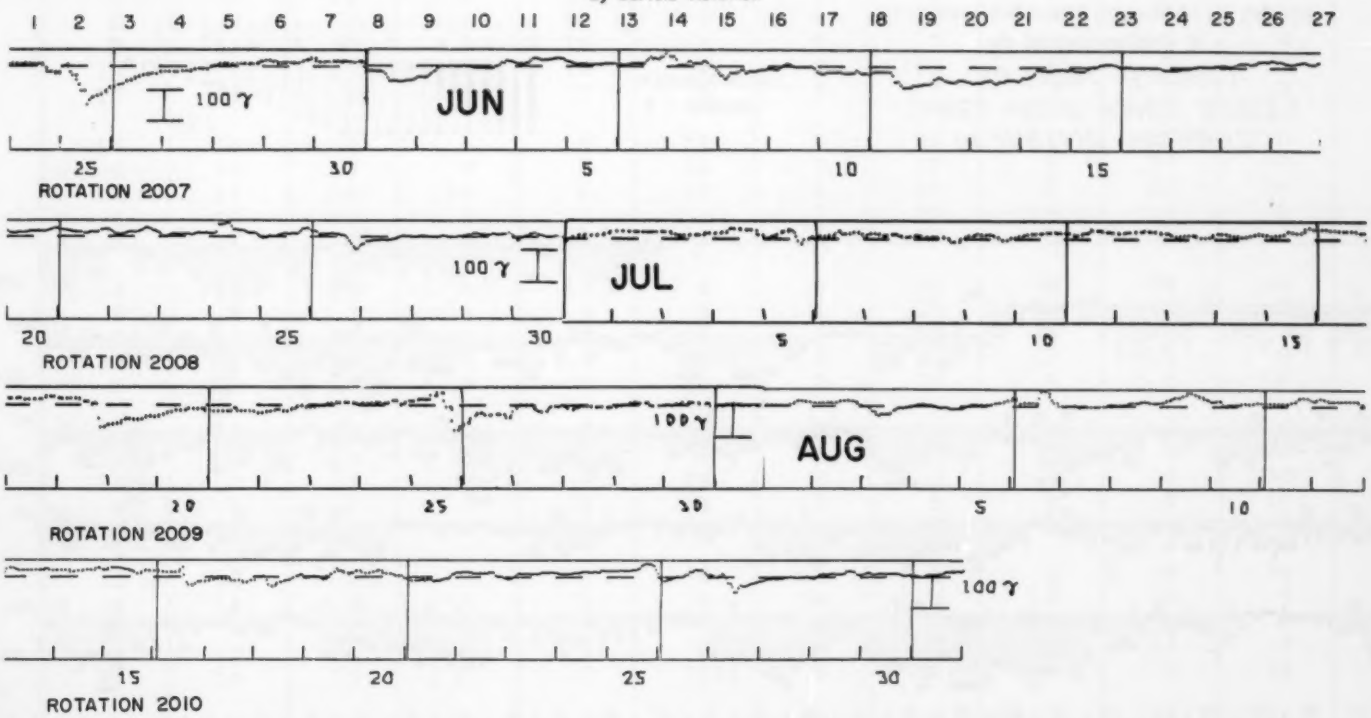
GEOMAGNETIC ACTIVITY INDICES



GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

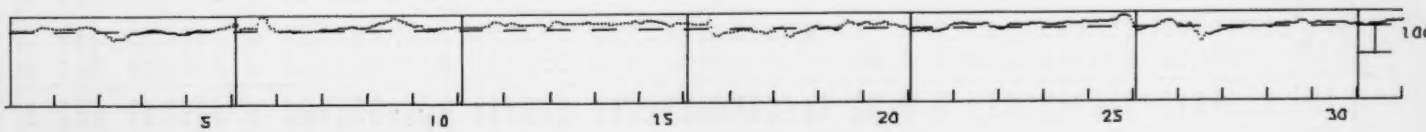
HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

NASA/GODDARD SPACE FLIGHT CENTER

AUGUST 1980

(Time-UT) (Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-1	2	3	5	4	3	2	1	0	0	-2	-4	-1	2	6	8	12	15	17	15	13	11	9	8
2	6	5	5	7	10	11	8	8	9	8	6	7	9	14	16	16	17	18	16	14	13	8	2	-2
3	-6	-3	-3	-6	-11	-20	-28	-29	-35	-24	-25	-24	-26	-28	-21	-14	-11	-6	-4	-8	-5	-4	-3	-2
4	0	1	4	6	6	7	3	-2	-2	-1	-4	-6	-9	-10	-10	-7	-5	-10	-13	-13	-12	-11	-13	-11
5	-11	-4	-1	2	4	5	5	3	2	4	3	4	4	4	7	9	10	11	12	12	15	17	18	18
6	26	21	13	3	5	11	11	10	10	10	6	4	8	25	44	47	42	35	26	15	6	6	-3	-4
7	-6	-4	-2	-2	-1	2	-3	-8	-10	-6	-3	-4	-5	-6	-3	-3	-4	-5	-1	-1	-2	-3	4	5
8	3	4	3	3	3	3	4	7	10	10	11	10	9	12	13	14	12	9	5	4	4	7	10	12
9	12	15	18	18	22	26	28	29	26	32	30	35	42	40	38	32	30	27	23	23	17	15	13	9
10	9	14	16	15	11	0	-5	4	5	4	3	6	5	5	9	9	8	7	7	8	9	12	12	10
11	9	11	9	8	8	8	7	7	7	8	8	6	9	12	13	13	17	23	27	27	23	24	24	15
12	12	15	20	24	24	17	15	13	10	10	11	14	15	15	16	14	14	16	15	15	17	15	7	1
13	3	14	23	30	27	23	18	18	14	16	16	17	16	16	20	21	21	15	17	20	25	23	16	14
14	15	15	18	19	19	20	18	17	10	14	17	18	16	18	20	21	22	18	15	19	26	28	24	17
15	15	21	26	29	28	28	29	28	22	20	17	17	14	13	11	6	8	10	15	19	21	18	14	15
16	15	17	16	12	11	10	10	13	13	12	11	15	22	30	1	-21	-28	-27	-30	-20	-14	-16	-12	-14
17	-13	-12	-9	-6	-6	-5	-5	-10	-10	-12	-12	-11	-15	-16	-13	-11	-10	-17	-22	-20	-14	-10	-15	-10
18	1	-1	2	4	-4	-14	-26	-34	-33	-25	-18	-14	-15	-12	-10	-9	-7	-3	0	3	4	8	3	-3
19	-8	-6	2	-1	-2	0	-5	-9	-12	-11	4	10	9	15	25	13	17	12	9	8	4	13	12	19
20	19	20	11	7	7	9	13	15	14	18	21	14	7	6	6	5	6	2	-1	-2	0	1	-7	-10
21	-11	-15	-16	-13	-12	-12	-8	-9	-16	-9	-6	-13	-17	-16	-15	-13	-8	-6	-5	-4	1	8	11	14
22	11	10	15	15	16	10	10	7	7	9	8	6	6	11	12	14	14	10	0	-4	-1	-2	-7	-9
23	-11	-11	-3	1	7	12	11	10	10	12	11	5	5	7	10	12	14	14	12	13	14	15	12	8
24	6	5	7	9	9	10	11	13	12	12	14	16	17	16	14	12	15	16	14	13	20	15	13	13
25	13	15	17	17	18	21	20	19	19	19	20	23	21	24	27	35	38	41	40	37	33	29	18	6
26	-8	-16	-15	-11	-7	-7	-3	0	2	0	0	3	8	8	16	14	21	23	20	22	15	10	3	4
27	3	-1	-5	-6	5	11	2	-8	-23	-25	-34	-51	-50	-34	-27	-33	-30	-26	-22	-19	-18	-16	-14	-12
28	-12	-10	-6	-6	-6	-4	-6	-6	-5	-5	-3	-1	-1	1	0	-1	-3	-3	-3	0	-2	1	-3	-7
29	-9	-4	1	6	9	10	9	8	9	11	11	8	7	7	10	11	17	18	17	16	10	4	2	4
30	9	12	13	10	4	4	9	11	12	8	7	8	8	8	8	7	7	4	1	-2	1	6	5	3
31	3	0	-4	-6	0	4	7	8	6	7	7	8	10	9	13	15	16	14	16	15	17	17	15	19



PRINCIPAL MAGNETIC STORMS

AUGUST 1980

OBS. 3 letter code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY (3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
COL	64.6N	02	20--	..	..	..	..	03(3,4,5)	6	156	1120	560	03	19
NEW	55.1N	02	07..	..	..	..	..	03(3,4)	5	35	123	175	04	09
SHL	14.7N	02	1500	..	..	..	..		-	5	103	30	03	20
UJJ	13.5N	02	1500	..	..	..	..		-	4	85	25	03	20
ABG	09.5N	02	1500	..				03(2,5)	4	5	97	22	03	20
HYB	07.6N	02	1300	..	..	..	..	03(5)	5	5	131	18	04	18
ANN	01.5N	02	1500	..	..	..	..		-	3	133	33	03	20
TRD	01.1S	02	1500	..	..	..	..		-	4	149	58	03	20
FRD	49.6N	06	0010	SC	- 1	35	- 4	06(1,5,7,8) 07(2)	4	24	110	32	08	
HON	21.1N	06	0010	SC	--	14	5	07(5,6)	4	3	67	31	07	12
SHL	14.7N	06	0010	SC	1.0	12	2		-	7	100	21	07	23
UJJ	13.5N	06	0010	SC	- .1	12	- 2		-	7	85	28	07	23
ABG	09.5N	06	0010	SC	- .1	11	- 1	06(5,6)	5	7	89	37	07	23
HYB	07.6N	06	0009	SC	.3	11	- 1	06(5,6)	5	7	98	25	07	15
GUA	04.0N	06	0010	SC*	--	30	- 9	06(0)	4	--	100	40	06	24
ANN	01.5N	06	0010	SC	- .3	14	6		-	7	95	52	07	23
TRD	01.1S	06	0010	SC	.2	11	15		-	5	111	67	07	23
KGL	56.5S	06	0010	SC	8	16	3	06(7)	5	--	--	--	07	07
HYB	07.6N	08	2100	..	..	..	..	09(5,6)	3	6	85	27	09	21
KGL	56.5S	09	2015	SC	-10	13	6	10(2,3)	3	--	--	--	10	09
NEW	55.1N	11	1655	SC*	2	9	--	12(1)	5	20	123	45	12	10
HYB	07.6N	11	1656	SC	- .2	10	- 1	11(8) 12(1,2)	4	9	89	40	12	20
NEW	55.1N	16	1240	SC*	13	35	16	16(5,6)	5	29	114	123	20	05
WIT	54.2N	16	1240	SC*	- 5 *	54	* 0	16(6)	6	24	165	105	16	21
FRD	49.6N	16	1240	SC	- 2	27	- 3	16(5,6) 19(6)	5	24	147	58	21	
HON	21.1N	16	1239	SC	1	32	10	16(5)	5	4	65	16	17	02
SHL	14.7N	16	1239	SC	.9	28	6		-	5	138	35	17	03
UJJ	13.5N	16	1239	SC	- .4	31	- 7		-	1	140	18	17	03
ABG	09.5N	16	1239	SC	- .7	25	- 6	16(5)	6	3	139	21	17	03
HYB	07.6N	16	1240	SC	- .3	27	- 3	16(6)	6	3	155	18	17	02
GUA	04.0N	16	1240	SC	--	29	- 9	16(5)	5	10	140	20	17	02
ANN	01.5N	16	1239	SC	- 1.3	36	17		-	4	166	52	17	03
TRD	01.1S	16	1239	SC	--	31	40		-	3	162	97	17	03
API	16.1S	16	1239	SC	- 1	27	- 9	16(6)	5	7	117	31	19	08
PMG	18.6S	16	1240	SC	.2	33	24	16(5,6)	5	5	110	60	17	09
KGL	56.5S	16	1240	SC*	46	41	10	16(6)	7	--	--	--	16	21
SHL	14.7N	17	1800	..	..	..	..		-	8	83	37	18	13
UJJ	13.5N	17	1800	..	..	..	..		-	9	69	39	18	13
ABG	09.5N	17	1800	..	..	..	..	18(4)	5	8	78	42	18	13
HYB	07.6N	17	0600	..	..	..	..	18(3,4)	4	7	112	20	18	11
ANN	01.5N	17	1800	..	..	..	..		-	6	131	49	18	13
TRD	01.1S	17	1800	..	..	..	..		-	5	191	97	18	13
WIT	54.2N	19	1025	SC*	2 *	26	0	19(6)	6	23	150	50	19	23
HON	21.1N	19	1024	SC	--	20	--	19(4,7,8)	3	6	63	--	20	04
SHL	14.7N	19	1024	SC	- .5	18	4		-	7	70	27	21	01
UJJ	13.5N	19	1024	SC	- .8	21	- 6		-	7	85	24	21	01
ABG	09.5N	19	1024	SC	- .9	18	-10	19(6)	5	7	84	35	21	01
HYB	07.6N	19	1024	SC	- .7	18	- 1	19(6)	5	10	113	25	21	10
GUA	04.0N	19	1024	SC	--	20	- 5		-	--	--	--		
ANN	01.5N	19	1024	SC	- 1.5	31	14		-	7	109	47	21	01
TRD	01.1S	19	1024	SC	- .3	31	35		-	6	126	78	21	01
KGL	56.5S	19	1023	SC*	-27	-25	8	19(7)	4	--	--	--	20	03
KGL	56.5S	20	0952	SC*	-16	-14	- 3	20(7) 21(3)	4	--	--	--	21	09
SHL	14.7N	25	2300	..	..	..	..		-	9	164	37	27	20
UJJ	13.5N	25	2300	..	..	..	..		-	7	138	41	27	20
ABG	09.5N	25	2300	..	..	..	..	27(3,4,5)	5	8	145	45	27	20
HYB	07.6N	25	1300	..	..	..	..	26(1)	4	8	81	20	26	16
ANN	01.5N	25	2300	..	..	..	..		-	7	237	72	27	20
TRD	01.1S	25	2300	..	..	..	..		-	6	287	113	27	20
NEW	55.1N	26	18..	..	..	..	..	27(4)	5	22	127	221	28	04
HYB	07.6N	26	1900	..	..	..	..	27(4,5)	5	7	173	29	28	03
GUA	04.0N	26	2123	..	..	..	..	27(5)	5	10	200	50	27	15
API	16.1S	27	0303	..	..	..	..	27(4)	5	4	117	26	28	03

REPORTS WERE RECEIVED FROM THE FOLLOWING OBSERVATORIES:

ALIBAG ANNAMALAINAGAR APIA COLLEGE FREDERICKSBURG GUAM HONOLULU HYDERABAD KERGUELEN
NEWPORT PORT MORESBY SHILLONG TRIVANDRUM UJJAIN WITTEVEEN

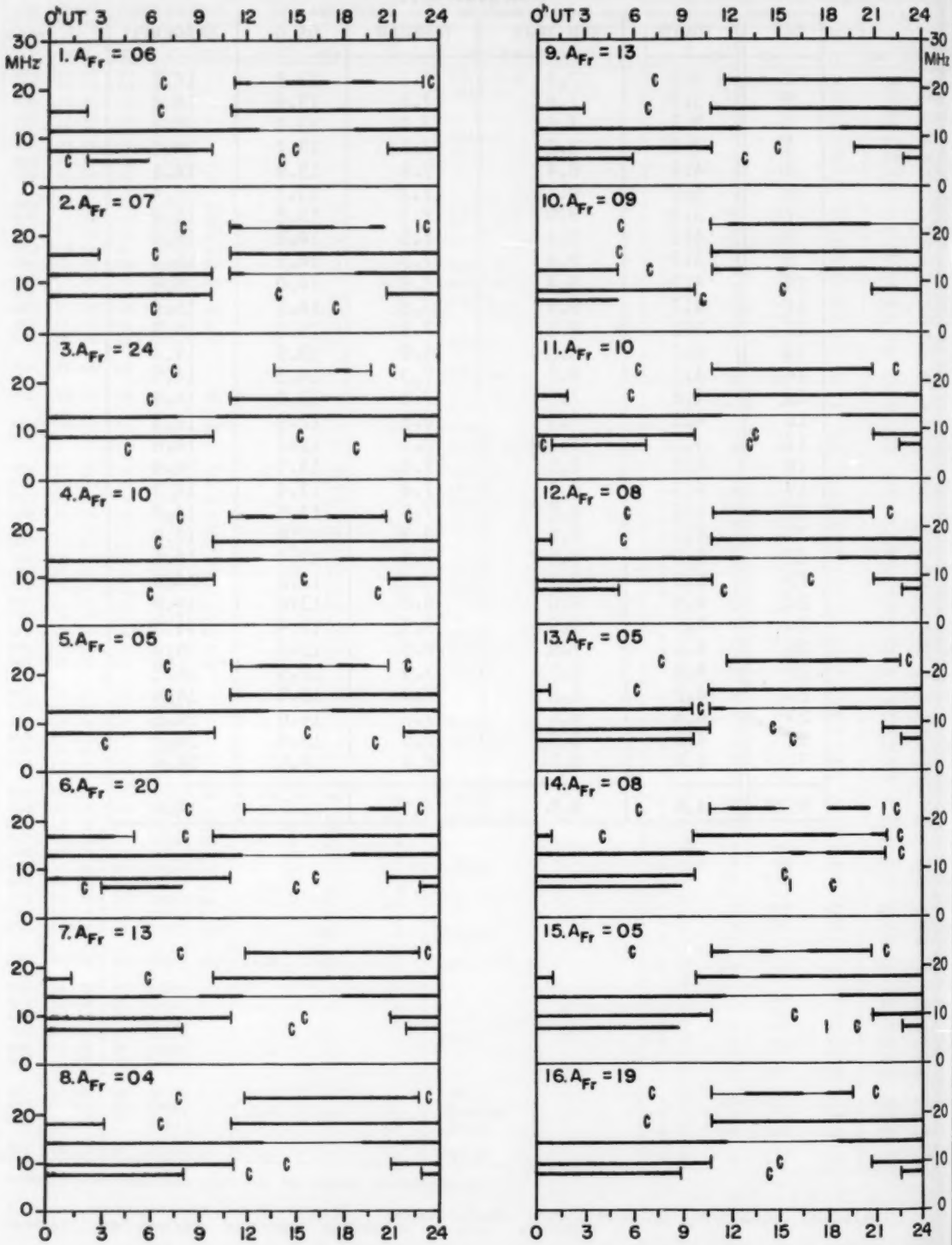
RADIO PROPAGATION QUALITY INDICES

AUGUST 1980

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	4.2	7.9	7.3	13.8	14.7
2	3.9	7.6	7.6	13.6	14.2
3	3.7	7.6	7.2	13.4	14.1
4	4.4	8.2	7.7	13.7	14.2
5	4.4	8.4	7.5	13.9	14.1
6	4.0	8.1	7.2	13.7	15.4
7	3.9	8.9	7.7	13.8	15.9
8	4.3	9.4	7.5	14.5	16.0
9	4.9	9.4	7.5	14.2	16.1
10	4.7	9.4	7.6	14.0	15.6
11	4.7	9.4	7.8	14.5	15.6
12	4.9	8.1	7.5	14.0	14.8
13	4.7	8.6	6.9	13.9	14.4
14	4.1	8.2	7.3	14.2	14.5
15	4.8	7.5	7.1	13.9	14.3
16	4.1	7.9	6.5	12.9	14.3
17	4.2	8.1	7.7	13.7	14.8
18	4.3	8.1	7.5	13.7	14.4
19	4.0	8.3	7.4	13.4	14.3
20	4.4	8.2	7.5	13.8	14.7
21	4.5	8.2	8.3	13.0	14.0
22	4.0	7.8	7.9	13.4	14.6
23	5.0	8.2	8.3	13.2	14.6
24	4.5	9.0	8.0	13.8	14.8
25	4.9	8.5	7.9	13.4	14.6
26	4.6	7.9	8.0	13.3	14.6
27	4.0	6.7	7.9	12.5	14.2
28	4.2	8.0	7.4	13.3	14.1
29	4.4	8.6	7.7	14.0	14.6
30	4.6	8.9	7.9	13.4	14.7
31	4.8	8.7	6.4	13.5	14.8
MEAN	4.4	8.3	7.5	13.7	14.7

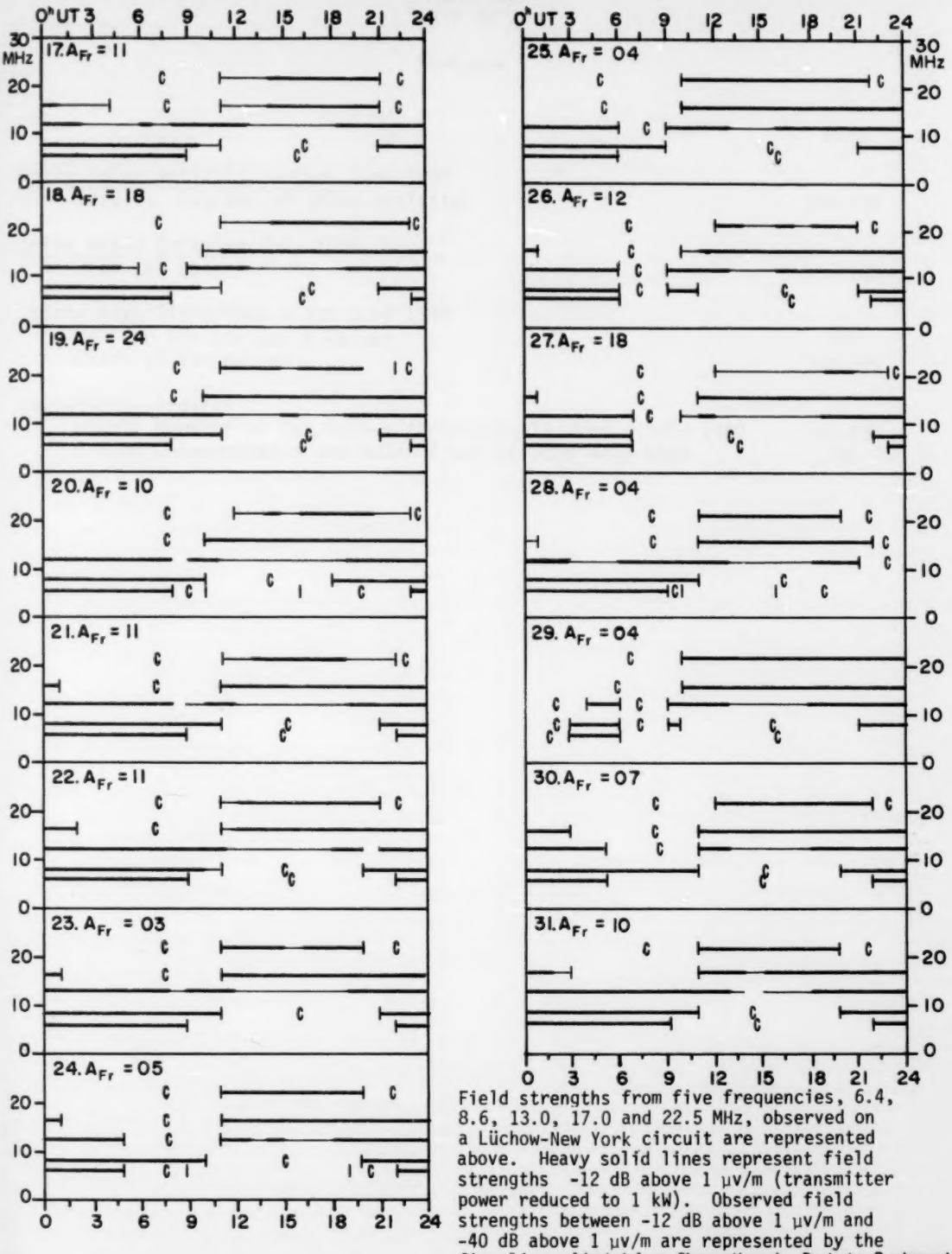
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1980



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

AUGUST 1980



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow-New York circuit are represented above. Heavy solid lines represent field strengths -12 dB above 1 μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line. Adapted from Observations by Deutsche Bundespost

SGD 434 Part I (Prompt)

LATE DATA

Contents

	Page
Daily Solar Activity Centers June 1980	
Errata: Regions of Solar Activity	158-176
Solar Radio Emission July 1980	
Spectral Observations	177-182
Cosmic Rays Alert/Deep River July 1980	
Neutron Monitor Daily Values	183
Chart of Variations	184-185
Geomagnetic Indices	
Hourly Equatorial Dst Values (Provisional) June - July 1980	186-187
Sudden Commencements and Solar Flare Effects July 1980	188

ERRATA: The Regions of Solar Activity for June 1980 published in SGD 432 Part I, pages 110-128 (August 1980 issue), contain errors in the sunspot data. We have republished here a revised version of the complete tabulation.

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16870 CMP DATE 1.2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	28	16870	N07	E48	96	100			N11	E39				H	130	1	HSX
80	05	29	16870	N07	E33	97	200	3.0		N11	E24				H	140	1	HSX
80	05	30	16870	N07	E23	95	100			N12	E13				R	120	1	HSX
80	05	31	16870	N07	E10	95	100											
80	06	1	16870	N08	W06	97	100	3.0		N11	W14				B	80	1	HSX
80	06	2	16870	N10	W21	97	100	2.5	21494	N08	W18	97	(AP)	2	B	120	1	HSX
80	06	3	16870	N10	W34	98	100	2.5		N12	W40				B	80	1	HSX
80	06	4	16870	N10	W48	98	100	2.5		N13	W53				B	60	1	HSX

HALE REGION 16871 CMP DATE 1.9 RETURN OF LEADING HALF OF REGION 16812 ROTATION 3

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	27	16871						21481	N18	E45	113	B	2	H	10	1	AXX
80	05	28	16871	N22	E32	112	1800											
80	05	29	16871	N22	E38	92	2300	3.0										
80	05	30	16871	N22	E30	88	1600											
80	05	31	16871	N22	E17	88	1600											
80	06	1	16871	N23	E03	88	2100	3.0	21490	N26	E12	80	(AP)	2	P	10	1	AXX
80	06	2	16871	N24	W13	89	1700	3.0	21490	N25	W02	81	(AP)	2				
80	06	3	16871	N24	W24	88	1100	3.0										
80	06	4	16871	N24	W38	88	1100	3.0										
80	06	5	16871	N25	W48	85	900	3.0										
80	06	6	16871	N25	W63	84	700	3.0										
80	06	7	16871	N26	W72	80	200	2.5										

HALE REGION 16874 CMP DATE 1.9

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	27	16874						21482	S32	E65	93	(AP)	4	H	30	3	BXO
80	05	28	16874	S32	E52	92	1300		21482	S32	E50	94	AP	3	H	30	5	CSO
80	05	29	16874	S33	E38	92	1900	4.0	21482	S32	E42	89	(BP)	3	H	40	9	BXO
80	05	30	16874	S33	E26	92	1400		21482	S32	E29	89	B	2	H	20	4	BXO
80	05	31	16874	S33	E13	92	1400											
80	06	1	16874	S33	E03	88	1200	3.5	21482	S34	E05	87	(AF)	2				
80	06	2	16874	S32	W09	85	800	3.5										
80	06	3	16874	S32	W22	86	900	3.0										
80	06	4	16874	S33	W35	85	1000	3.0										
80	06	5	16874	S33	W48	85	600	3.0										
80	06	6	16874	S33	W62	83	500	3.0										
80	06	7	16874	S33	W74	82	300	2.5										

HALE REGION 16886 CMP DATE 2.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	3	16886	N14	W22	86	100	2.0										
80	06	4	16886	N14	W38	88	400	3.0	21502	N13	W37	89	(B)	3	B	20	5	BXO
80	06	5	16886	N14	W52	89	500	3.0	21502	N14	W50	89	(D)	5	H	130	10	DSO
80	06	6	16886	N15	W67	88	400	3.0	21502	N14	W64	90	(D)	4	H	360	10	DKO
80	06	7	16886	N14	W80	88	200	3.0	21502	N14	W77	90	(B)	3	H	200	8	DAO

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16876 CMP DATE 2.3 NEW REGION IN LOCATION OF REGION 16816

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	29	16876	S14	E47	83	700	2.0		S18	E53				P	160	5	CHO
80	05	30	16876	S14	E35	83	400											
80	05	31	16876	S14	E22	83	400			S15	E28				M	90	3	CSO

HALE REGION 16873 CMP DATE 3.3 RETURN OF REGION 16815 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	27	16873						21483	S20	E80	78	(AP)	4	H	60	2	HSX
80	05	28	16873	S23	E67	77	1300		21483	S20	E67	77	AP	3	H	130	1	HSX
80	05	29	16873	S23	E58	72	1800	3.5	21483	S20	E56	75	(BP)	5	B	150	6	HSX
80	05	30	16873	S23	E45	73	2100		21483	S20	E42	76	(AP)	5	H	240	4	DAO
80	05	31	16873	S23	E32	73	2100			S20	E29				H	230	4	CAO
80	06	1	16873	S24	E21	70	2100	3.0	21483	S21	E18	74	(BP)	5	B	190	4	CKO
80	06	2	16873	S23	E07	69	1700	3.0	21483	S21	E05	74	(BP)	4	H	180	2	DAO
80	06	3	16873	S23	W05	69	1400	3.0	21483	S20	W09	74	(AP)	4	B	100	5	CSO
80	06	4	16873	S23	W18	68	1600	3.0	21483	S20	W22	74	(AP)	4	B	110	2	HSX
80	06	5	16873	S23	W30	67	1200	3.0	21483	S21	W35	74	(AP)	4	H	130	3	DSO
80	06	6	16873	S22	W48	69	1300	3.0	21483	S21	W47	73	(AP)	4	H	90	2	DSO
80	06	7	16873	S22	W62	70	700	2.5	21483	S21	W59	72	(AP)	4	H	60	1	HSX
80	06	8	16873	S22	W70	67	600	3.0	21483	S21	W72	71	(AP)	2	H	60	1	HSX
80	06	9	16873	S19	W75	59	100	2.0	21483	S21	W87	73	AP	1	B	30	1	HSX

HALE REGION 16872 CMP DATE 3.9 RETURN OF TRAILING HALF OF REGION 16812 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	28	16872	N24	E75	69	300											
80	05	29	16872	N24	E64	66	1300	3.0		N21	E54				H	170	6	CKO
80	05	30	16872	N24	E58	60	1600											
80	05	31	16872	N24	E45	60	1600											
80	06	1	16872	N27	E28	63	1500	3.0										
80	06	2	16872	N27	E15	61	1700	3.0										
80	06	3	16872	N27	E03	61	1300	3.5		N27	E12				M	20	2	CRO
80	06	4	16872	N27	W12	62	1100	3.0										
80	06	5	16872	N28	W21	58	1300	3.0		N26	W12				P	60	8	DAO
80	06	6	16872	N28	W37	58	1300	3.0										
80	06	7	16872	N30	W50	58	900	3.0										
80	06	8	16872	N29	W65	62	600	3.0										
80	06	9	16872	N28	W72	56	200	2.5		N23	W62				P	30	3	CSO

HALE REGION 16875 CMP DATE 4.2 RETURN OF REGION 16830 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	29	16875	N13	E77	53	100	3.0	21488	N13	E76	55	(AP)	4	H	40	1	HSX
80	05	30	16875	N12	E66	52	100		21488	N12	E62	56	(AP)	4	H	60	1	HSX
80	05	31	16875	N12	E53	52	100			N12	E47				H	40	1	HSX
80	06	1	16875	N12	E36	55	200	2.5	21488	N12	E35	57	(AP)	4	B	30	1	HSX
80	06	2	16875	N13	E19	57	200	3.0	21488	N12	E22	57	(BP)	4	H	50	4	CSO
80	06	3	16875	N13	E07	57	200	2.0	21488	N13	E09	56	(BP)	4	B	40	4	CSO
80	06	4	16875	N13	W07	57	300	2.5	21488	N12	W06	58	(AP)	4	B	60	1	HSX
80	06	5	16875	N13	W20	57	100	2.5	21488	N12	W19	58	(AP)	4	H	40	1	HSX
80	06	6	16875	N13	W36	57	200	2.5	21488	N12	W33	59	(AP)	4	H	30	1	HSX
80	06	7	16875	N13	W52	60	100	2.0	21488	N12	W46	59	(AP)	4	H	60	1	HSX
80	06	8	16875						21488	N12	W59	58	(AP)	4	H	60	1	HSX
80	06	9	16875						21488	N12	W73	59	(AP)	2	H		1	AXX

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16877 CMP DATE 4.5 RETURN OF 16819 & NORTH PART OF 16822 ROTATION 3

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	05	29	16877	S14 E77	53	300	2.5	21487	S13 E83	48	AP	1	H	10	2	AXX
80	05	30	16877	S15 E65	53	600		21487	S12 E65	53	(AP)	3	H	20	1	HRX
80	06	1	16877	S13 E38	53	1200	3.5	21487	S12 E40	52	(B)	3	B	30	6	BXO
80	06	2	16877	S12 E25	51	1600	3.5	21487	S13 E26	53	(B)	3	H	40	11	CRO
80	06	3	16877	S12 E12	52	1500	3.5	21487	S12 E13	52	(B)	3	B	40	7	DSO
80	06	4	16877	S12 W03	53	1400	3.5	21487	S11 E01	51	(B)	4	B	30	6	CSO
80	06	5	16877	S12 W15	52	1500	3.5	21487	S11 W13	52	(B)	3	H	30	8	CSO
80	06	6	16877	S12 W31	52	1700	3.0	21487	S12 W27	53	(B)	3	H	20	4	CSO
80	06	7	16877	S12 W45	53	1600	3.0	21487	S12 W39	52	(B)	4	H	40	8	DRO
80	06	8	16877	S12 W56	53	1200	3.5	21487	S12 W53	52	(B)	3	H	80	7	CAO
80	06	9	16877	S10 W69	53	500	2.5	21487	S11 W67	53	(B)	3	H	10	2	BXO
80	06	10	16877	S10 W80	54	300	3.0									

HALE REGION 16880 CMP DATE 4.5

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	1	16880	N08 E38	53	100	2.5		N11 E33				B	30	1	HSX
80	06	2	16880	N08 E23	53	100	2.5		N13 E22				H	50	4	CSO

HALE REGION 16887 CMP DATE 4.5

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	3	16887	S20 E12	52	100	3.0	21499	S21 E13	52	(B)	3	B	20	3	CSO
80	06	4	16887	S20 W03	53	300	2.5									
80	06	5	16887	S19 W16	53	200	2.5									
80	06	6	16887	S19 W31	52	100	2.0		S21 W41				M	100	2	DSO
80	06	7	16887	S18 W40	48	100	2.0		S13 W42				P	20	3	CAO

HALE REGION 16879 CMP DATE 4.6

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	1	16879	N19 E40	51	200	2.0									
80	06	2	16879	N19 E26	50	200	3.0	21496	N20 E18	61	(AP)	2				
80	06	3	16879	N18 E15	49	200	2.5	21501	N18 E18	47	(AP)	1				
80	06	4	16879	N18 W02	52	200	2.5									
80	06	5	16879	N20 W12	49	100	2.5									
80	06	6	16879	N20 W28	49	100	2.5	21507	N20 W25	51	(AP)	2				
80	06	7	16879	N21 W43	51	200	2.5		N26 W37				H	20	1	HRX
80	06	8	16879	N20 W54	51	100	2.0		N25 W47				H	30	8	CRO

HALE REGION 16878 CMP DATE 5.1 NEW REGION IN LOCATION OF LEADING EDGE OF REGION 16820

			CALCIUM PLAGE DATA						SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	1	16878	N26 E46	45	300	2.0									
80	06	2	16878	N26 E29	47	100	2.5		N26 E27				M		1	AXX
80	06	3	16878	N26 E17	47	200	3.0	21500	N27 E19	46	(B)	3	B	20	2	BXO
80	06	4	16878	N26 E04	46	400	3.0	21500	N26 E05	47	(B)	4	B	50	3	DSO
80	06	5	16878	N27 W08	45	400	3.0	21500	N27 W07	46	(B)	4	H	80	9	DSO
80	06	6	16878	N27 W24	45	300	3.0	21500	N27 W20	46	(B)	3	H	40	8	DSO
80	06	7	16878	N27 W37	45	500	3.0	21500	N27 W35	48	(BP)	3	H	20	1	HRX
80	06	8	16878	N27 W50	47	1000	3.0	21500	N26 W46	45	(B)	3	H	30	8	CRO
80	06	9	16878	N27 W62	46	400	2.5	21500	N25 W60	46	(B)	3	H	20	2	C O
80	06	10	16878	N27 W70	44	400	3.0	21500	N24 W79	52	AP	1	H		1	AXX

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16881 CMP DATE 5.3

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	1	16881	S12 E51	40	1000	4.0	21491	S12 E51	41	(B)	4	B	80	2	DSO
80	06	2	16881	S12 E33	43	500	3.5	21491	S12 E37	42	(B)	4	H	100	6	DAO
80	06	3	16881	S11 E22	42	700	3.0	21491	S11 E23	42	(B)	4	B	130	6	DSO
80	06	4	16881	S11 E07	43	400	3.0	21491	S11 E09	43	(B)	4	B	30	6	CSO
80	06	5	16881	S11 W05	42	500	3.0	21491	S12 W06	45	(BP)	4	H	60	5	DSO
80	06	6	16881	S11 W22	43	400	3.0	21491	S12 W21	47	(AP)	4	H	80	9	DSO
80	06	7	16881	S12 W35	43	400	2.5	21491	S12 W34	47	(AP)	3	H	40	8	DRO
80	06	8	16881	S12 W46	43	300	3.0	21491	S12 W48	47	(AP)	2	H	80	7	CAO
80	06	9	16881	S10 W59	43	100	2.0		S12 W68				H	10	2	BXO
80	06	10	16881	S12 W68	42	200	3.0									

HALE REGION 16883 CMP DATE 5.8

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	2	16883	N20 E41	35	100	3.0	21497	N20 E43	36	(B)	2	H	10	2	BXO
80	06	3	16883	N21 E28	36	100	3.0	21497	N19 E30	35	(AF)	2				
80	06	4	16883	N21 E14	36	100	2.5		N26 E06				B	50	3	DSO

HALE REGION 16896 CMP DATE 5.9

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	8	16896	N11 W38	35	300	3.0	21514	N11 W34	33	(BY)	2	H	30	7	BXO
80	06	9	16896	N11 W51	35	200	2.5	21514	N10 W50	36	(BF)	3	B	60	3	CSO
80	06	10	16896	N10 W62	36	300	4.0									
80	06	11	16896	N09 W71	31	200	3.0									

HALE REGION 16888 CMP DATE 6.5

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	3	16888	S21 E36	28	300	2.5									
80	06	4	16888	S24 E23	27	200	2.5	21504	S25 E24	28	(AP)	2				
80	06	5	16888	S24 E11	26	200	3.0									
80	06	6	16888	S24 W05	26	200	3.0									
80	06	7	16888	S25 W17	25	200	2.0	21510	S16 W34	47	(AP)	1	H	40	8	DRO
80	06	8	16888	S24 W29	26	100	2.5									

HALE REGION 16882 CMP DATE 7.1 NEW REGION IN LOCATION OF REGION 16825

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	1	16882	S12 E64	27	500	3.0									
80	06	2	16882	S11 E52	24	700	3.0		S10 E47				M	70	7	DSO
80	06	3	16882	S08 E34	30	800	3.0									
80	06	4	16882	S09 E24	26	700	3.0									
80	06	5	16882	S09 E13	24	800	3.0		S10 E05				M	10	1	AXX
80	06	6	16882	S09 E02	19	600	3.0	21508	S08 W06	32	AP	1	M	30	2	HSX
80	06	7	16882	S09 W15	23	700	2.5	21511	S07 W24	37	(AP)	2	R	10	1	AXX
80	06	8	16882	S07 W29	26	600	3.0		S11 W36				R	10	1	AXX
80	06	9	16882	S06 W47	31	200	2.5									
80	06	10	16882	S07 W57	31	200	2.5									
80	06	11	16882	S07 W73	33	200	1.5									

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16884 CMP DATE 8.5

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	2	16884	S14 E78	358	900	4.0	21498	S14 E80	359	(X)	2	H	30	2	CRO
80	06	3	16884	S14 E67	357	2500	4.0	21498	S15 E68	357	(D)	3	B	340	12	DRO
80	06	4	16884	S14 E52	358	2400	4.0	21498	S15 E55	357	(D)	4	B	460	13	DRO
80	06	5	16884	S14 E39	358	3800	3.5	21498	S14 E41	358	(D)	5	H	490	30	DAI
80	06	6	16884	S14 E23	358	3600	3.5	21498	S13 E27	359	(D)	4	H	490	41	DAI
80	06	7	16884	S14 E08	0	3800	4.0	21498	S14 E14	359	(D)	4	H	410	44	EKI
80	06	8	16884	S14 W04	1	3500	4.0	21498	S15 E02	357	(BY)	4	R	440	71	EKI
80	06	9	16884	S14 W16	0	2900	3.5	21498	S15 W12	358	(D)	4	H	400	21	EAI
80	06	10	16884	S15 W27	1	4200	4.5	21498	S15 W24	357	(D)	4	H	270	43	EAI
80	06	11	16884	S15 W38	358	3600	4.0	21498	S16 W37	357	(BY)	3	H	190	30	EAI
80	06	12	16884	S13 W51	358	3800	4.0	21498	S16 W50	357	(B)	4	H	120	15	DSO
80	06	13	16884	S15 W65	359	2400	4.5	21498	S16 W62	355	(B)	3	H	120	17	DAI
80	06	14	16884	S14 W72	352	2200	3.5		S13 W73				H	20	3	BXO

HALE REGION 16908 CMP DATE 8.6

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	11	16908	N11 W39	359	100	2.5									
80	06	12	16908	N10 W53	0	100	3.0									
80	06	13	16908	N07 W66	0	100	2.0									

HALE REGION 16885 CMP DATE 9.3 RETURN OF REGION 16828 ROTATION 3

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	2	16885	S33 E68	8	700	3.0									
80	06	3	16885	S33 E60	4	1000	2.5									
80	06	4	16885	S34 E50	0	1200	3.0									
80	06	5	16885	S34 E40	357	1300	3.5									
80	06	6	16885	S35 E31	350	2500	3.5									
80	06	7	16885	S35 E16	352	2100	3.5									
80	06	8	16885	S35 E07	350	2000	3.0									
80	06	9	16885	S35 W08	352	1200	3.0									
80	06	10	16885	S36 W16	350	1500	3.5	21524	S36 W03	336	(AP)	1				
80	06	11	16885	S36 W22	342	2000	3.0									
80	06	12	16885	S35 W31	338	2600	3.0									
80	06	13	16885	S36 W40	334	1600	3.0									
80	06	14	16885	S35 W55	335	700	3.0									
80	06	15	16885	S35 W62	330	400	2.0									

HALE REGION 16904 CMP DATE 9.3 NEW REGION IN LOCATION OF LEADING EDGE OF REGION 16839

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	10	16904	S16 W16	350	600	4.5	21523	S15 W16	349	(BY)	4	H	70	12	DSO
80	06	11	16904	S14 W28	348	900	4.0	21523	S13 W30	350	(B)	4	H	180	14	DSO
80	06	12	16904	S13 W42	349	1200	4.0	21523	S14 W44	351	(B)	3	H	120	15	DSO
80	06	13	16904	S13 W55	349	1700	4.0	21523	S14 W55	348	(B)	3	H	120	4	DAO
80	06	14	16904	S16 W65	345	900	3.0	21523	S14 W70	350	(B)	3	H	10	1	AXI
80	06	15	16904	S15 W78	346	700	3.0	21523	S15 W79	345	AP	1	R		1	AXI

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16890 CMP DATE 9.5

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	4	16890	S07	E67	343	100	2.0										
80	06	5	16890	S07	E54	343	200	3.5		S12	E50				M	320	14	DAO
80	06	6	16890	S07	E37	344	300	3.0	21509	S07	E42	344	(BF)	3	H	30	3	CSO
80	06	7	16890	S07	E24	344	300	3.0	21509	S07	E29	344	(AF)	2	H	10	1	AXX
80	06	8	16890	S07	E12	345	200	3.0		S07	E15				H		2	AXX
80	06	9	16890	S07	W03	347	200	3.0		S12	W07				M	390	31	EKI
80	06	10	16890	S07	W13	347	200	3.5										
80	06	11	16890	S06	W27	347	100	3.0										
80	06	12	16890	S06	W42	349	100	3.0										
80	06	13	16890	S08	W54	348	200	2.0		S13	W53				B	80	8	BXO
80	06	14	16890	S09	W70	350	100	2.0		S13	W73				H	20	3	BXO

HALE REGION 16891 CMP DATE 9.5

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	4	16891	N18	E60	350	700	3.5	21505	N16	E63	349	(B)	3	B	20	4	BXO
80	06	5	16891	N18	E48	349	1200	3.0	21505	N18	E49	350	(B)	3	H	50	7	CSO
80	06	6	16891	N18	E32	349	1200	3.5	21505	N18	E35	351	(B)	3	H	20	4	CSO
80	06	7	16891	N18	E19	349	2100	3.5	21505	N18	E23	350	(B)	4	H	80	8	CRO
80	06	8	16891	N19	E08	349	1900	3.5	21505	N18	E09	350	(B)	4	H	70	10	DAO
80	06	9	16891	N19	W04	348	1300	3.5	21505	N18	W04	350	(B)	2	H	50	3	CAO
80	06	9	16891	N19	W04	348	1300	3.5	21520	N23	E05	341	(AF)	2	B	10	1	AXX
80	06	10	16891	N19	W14	348	2500	4.0	21505	N18	W18	351	(BY)	3	H	70	22	DSO
80	06	10	16891	N19	W14	348	2500	4.0	21520	N23	W14	347	(B)	4	H	70	22	DSO
80	06	11	16891	N21	W28	348	2700	4.0	21520	N24	W25	345	(BF)	4	R	30	19	BXO
80	06	11	16891	N21	W28	348	2700	4.0	21505	N19	W31	351	(BP)	3	R	30	19	BXO
80	06	12	16891	N21	W41	348	3200	4.0	21520	N24	W37	344	(B)	3	H	60	7	DSO
80	06	13	16891	N20	W53	347	2200	4.0	21520	N24	W48	341	(AF)	3	H	10	1	AXX
80	06	14	16891	N22	W66	346	800	4.0	21520	N24	W61	341	(AF)	3	H	10	3	AXX
80	06	15	16891	N21	W79	347	700	3.5										

HALE REGION 16889 CMP DATE 9.6 RETURN OF SOUTHERN PART OF 16839&16838 ROTATIONS 2 AND 3

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	3	16889	S23	E78	346	500	3.0										
80	06	4	16889	S24	E63	347	700	4.0	21506	S25	E78	334	(AF)	2				
80	06	5	16889	S24	E56	341	1300	3.5	21506	S24	E64	335	(AF)	3	B	10	1	AXX
80	06	6	16889	S24	E39	342	2600	3.0	21506	S24	E50	336	(AF)	2	H		1	AXX
80	06	7	16889	S24	E28	340	1800	3.5	21506	S24	E36	337	(AF)	2	R	10	1	AXX
80	06	8	16889	S22	E14	343	1900	3.5	21506	S24	E22	337	(BF)	2	H	20	4	BXO
80	06	8	16889	S22	E14	343	1900	3.5	21515	S19	E14	345	(B)	2	H	20	4	BXO
80	06	9	16889	S22	W02	346	1600	3.5	21515	S18	W02	348	(B)	3	H	10	2	BXO
80	06	9	16889	S22	W02	346	1600	3.5	21518	S25	W04	350	(B)	2	H	50	6	CAO
80	06	10	16889	S23	W11	345	1900	4.0	21518	S24	W17	350	(B)	3	H	90	19	DSO
80	06	10	16889	S23	W11	345	1900	4.0	21515	S18	W15	348	(B)	4	H	70	12	DSO
80	06	11	16889	S21	W23	343	2700	3.5	21515	S17	W26	346	(B)	3	H	180	14	DSO
80	06	11	16889	S21	W23	343	2700	3.5	21518	S25	W31	351	(B)	4	H	90	13	DSO
80	06	12	16889	S22	W37	344	3600	3.5	21518	S25	W43	350	(B)	3	H	80	12	CSO
80	06	13	16889	S23	W48	342	2300	4.0	21518	S25	W54	347	(BP)	3	H	80	5	CRO
80	06	14	16889	S23	W65	345	1100	3.5		S25	W70				H	10	1	AXX
80	06	15	16889	S23	W72	340	700	3.0										

HALE REGION 16895 CMP DATE 10.0

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	7	16895	N15	E28	340	100	2.0		N17	E23				H	80	8	CRO
80	06	8	16895	N15	E17	340	200	3.0		N17	E07				H	70	10	DAO
80	06	9	16895	N14	E03	341	500	3.0	21519	N14	E04	342	(B)	3	H	30	5	CAO
80	06	10	16895	N12	W08	342	700	4.0	21519	N14	W10	343	(BP)	4	H	90	12	DSO
80	06	11	16895	N13	W23	343	900	4.0	21519	N14	W24	344	(D)	4	H	190	5	DSO

CONT

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16895 (CONT) CMP DATE 10.0

			CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	12	16895	N14	W35	342	1200	4.0	21519	N14	W37	344	(BP)	4	H	140	11	CSO
80	06	13	16895	N13	W48	342	800	4.0	21519	N14	W50	343	(D)	4	H	190	6	CKO
80	06	14	16895	N15	W62	342	600	4.0	21519	N13	W62	342	(D)	3	H	80	3	CSO
80	06	15	16895	N15	W73	341	500	3.5	21519	N14	W77	343	(AP)	4	H	40	1	HRX

HALE REGION 16892 CMP DATE 10.7

			CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	4	16892	N08	E78	332	300	2.5										
80	06	5	16892	N08	E67	330	200	2.5										
80	06	6	16892	N08	E48	333	200	3.0										
80	06	7	16892	N08	E36	332	300	2.5										
80	06	8	16892	N08	E26	331	200	2.5										
80	06	9	16892	N09	E12	332	100	1.5		N13	E05				H	30	5	CAO
80	06	10	16892	N09	E02	332	300	3.0		N14	E11				H	60	14	DSO
80	06	11	16892	N11	W13	333	200	3.0		N13	W23				H	190	5	DSO
80	06	12	16892	N09	W25	332	500	3.5	21527	N07	W20	327	(B)	2	H	10	2	CSO
80	06	13	16892	N08	W36	330	500	3.5		N13	W29				H	100	10	DAO
80	06	14	16892	N09	W48	328	300	3.5		N13	W45				H	60	11	DAO
80	06	15	16892	N08	W59	327	200	2.5										

HALE REGION 16897 CMP DATE 11.3

			CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	8	16897	N14	E36	321	300	3.5	21516	N13	E38	321	(B)	2	H	20	5	BXO
80	06	9	16897	N14	E23	321	400	3.5	21516	N15	E25	321	(B)	3	H	30	5	CAO
80	06	10	16897	N12	E12	322	600	4.0	21516	N14	E10	323	(B)	3	H	60	14	DSO
80	06	11	16897	N13	W03	323	900	3.5	21516	N14	W04	324	(B)	3	H	50	11	CSO
80	06	12	16897	N13	W16	323	1200	4.0	21516	N14	W18	325	(B)	3	H	90	16	DSO
80	06	13	16897	N13	W29	323	1600	4.0	21516	N14	W31	324	(BP)	3	H	100	10	DAO
80	06	14	16897	N14	W42	322	1200	4.0	21516	N14	W45	325	(B)	3	H	60	11	DAO
80	06	15	16897	N14	W55	323	1300	3.5	21516	N14	W57	323	(B)	3	H	20	5	BXO
80	06	16	16897	N13	W68	323	1200	3.5		N13	W70				H	10	4	BXO
80	06	17	16897	N13	W82	323	300	3.5										

HALE REGION 16893 CMP DATE 11.7 RETURN OF REGIONS 16842 AND 16843 ROTATIONS 2 AND 4

			CALCIUM PLAGE DATA							SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	5	16893	S21	E70	327	100	2.5		S25	E66				B	10	1	AXX
80	06	6	16893	S23	E58	323	400	2.5		S22	E49				H		1	AXX
80	06	7	16893	S24	E53	315	700	3.0		S24	E43				M	10	2	BXX
80	06	8	16893	S24	E38	319	800	3.0		S24	E45				H	20	3	BXO
80	06	9	16893	S25	E27	317	500	3.0		S22	E31				B	30	2	HSX
80	06	10	16893	S24	E13	321	500	3.0										
80	06	11	16893	S23	E02	318	900	3.5		S22	E06				B	10	1	AXX
80	06	12	16893	S23	W12	319	1000	3.5										
80	06	13	16893	S23	W22	316	500	3.0		S22	W12				P	10	7	BXI
80	06	14	16893	S22	W40	320	500	3.0										
80	06	15	16893	S22	W53	321	300	2.5										
80	06	16	16893	S23	W80	335	100	2.0										

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16903 CMP DATE 12.7

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	10	16903	S18	E26	308	100	2.5		S22	E31				H	20	2	HSX
80	06	11	16903	S17	E15	305	100	3.0		S22	E06				B	10	1	AXX

HALE REGION 16900 CMP DATE 12.9 NEW REGION IN LOCATION OF REAR PORTION OF REGION 16844

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	7	16900						21513	S23	E59	314	(AF)	2				
80	06	8	16900						21513	S25	E45	314	(B)	3	H	20	3	BXO
80	06	9	16900	S24	E41	303	100	3.0	21513	S24	E32	314	(AP)	2	B	30	2	HSX
80	06	10	16900	S26	E30	304	100	3.5	21513	S22	E30	303	(AP)	2	H	20	2	HSX
80	06	11	16900	S22	E18	302	200	3.0										
80	06	12	16900	S22	E05	302	200	3.5	21528	S22	E03	304	(B)	2	H	10	3	BXO
80	06	13	16900	S22	W08	302	300	3.5	21528	S22	W10	303	(B)	3	H	20	8	CRO
80	06	14	16900	S22	W23	303	600	4.0	21528	S22	W25	305	(B)	3	H	20	3	BXO
80	06	15	16900	S22	W36	304	400	4.0	21528	S22	W39	305	(BP)	3	H	30	5	DSO
80	06	16	16900	S23	W49	304	500	3.5	21528	S22	W52	305	(B)	2	H	20	3	BXO
80	06	17	16900	S23	W63	304	700	3.5	21528	S22	W63	304	(B)	3	H	20	2	CSO
80	06	18	16900	S23	W75	302	400	3.5	21528	S22	W75	302	AF	1	B		1	AXX

HALE REGION 16894 CMP DATE 13.1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	6	16894	N17	E80	301	400	2.0										
80	06	7	16894	N17	E68	300	400	2.5										
80	06	8	16894	N17	E57	300	200	3.0										
80	06	9	16894	N17	E43	301	300	3.0		N14	E33				M	60	9	CAO
80	06	10	16894	N16	E35	299	300	3.0										
80	06	11	16894	N17	E20	300	300	3.0										
80	06	12	16894	N19	E07	300	400	3.0										
80	06	13	16894	N18	W06	300	500	2.5										
80	06	14	16894	N19	W18	298	300	3.0										
80	06	15	16894	N18	W32	300	400	3.0										
80	06	16	16894	N18	W44	299	200	3.0										
80	06	17	16894	N18	W53	294	100	3.0										
80	06	18	16894	N18	W64	291	200	2.0		N13	W56				H		1	AXX

HALE REGION 16907 CMP DATE 14.1 RETURN OF REGION 16846 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	10	16907	S09	E45	289	200	2.5										
80	06	11	16907	S07	E32	288	300	3.0										
80	06	12	16907	S10	E20	287	300	3.0										
80	06	13	16907	S11	E07	287	300	3.0										
80	06	14	16907	S12	W08	288	100	3.0										
80	06	15	16907	S10	W21	289	100	3.0										
80	06	16	16907	S10	W35	290	100	3.5										
80	06	17	16907	S12	W48	289	100	2.5										

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16898 CMP DATE 14.8

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	8	16898	N18	E80	277	300	3.5	21517	N17	E80	279	AP	2	H	60	2	CSO
80	06	9	16898	N17	E68	276	1200	4.0	21517	N17	E70	276	(B)	3	H	160	4	CAO
80	06	10	16898	N16	E58	276	1700	4.0	21517	N18	E57	276	(B)	4	H	140	9	ESO
80	06	11	16898	N17	E42	278	2200	4.5	21517	N17	E40	280	(BP)	4	H	10	4	BXO
80	06	12	16898	N17	E29	278	2900	4.0	21517	N17	E25	282	(BY)	4	H	180	12	CSO
80	06	13	16898	N16	E15	279	2900	4.0	21517	N17	E14	279	(BP)	5	H	320	19	EHI
80	06	14	16898	N16	E02	278	4700	4.0	21517	N17	E01	279	(BP)	5	B	50	6	CSO
80	06	15	16898	N15	W12	280	4200	4.0	21517	N17	W14	280	(BP)	5	H	390	23	DKO
80	06	16	16898	N16	W24	279	3800	4.0	21517	N17	W27	280	(BP)	5	H	360	21	DHO
80	06	17	16898	N16	W38	279	3900	4.0	21517	N17	W40	281	(B)	5	H	600	18	EKI
80	06	18	16898	N16	W50	277	4000	4.0	21517	N18	W54	281	(B)	4	H	480	9	ESO
80	06	19	16898	N17	W62	276	2800	4.0	21517	N18	W66	280	(BP)	4	B	220	6	CHO
80	06	20	16898	N20	W75	275	1800	3.5	21517	N18	W81	281	(AP)	4	H	140	3	CHO

HALE REGION 16902 CMP DATE 15.4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	9	16902	S25	E75	269	600	3.0	21521	S23	E70	276	(AP)	2	B	20	2	BXO
80	06	10	16902	S23	E62	272	600	3.0	21521	S23	E57	276	(AP)	3	H		1	HSX
80	06	11	16902	S22	E47	273	1600	3.5	21521	S23	E44	276	(AP)	2	H		1	AXX
80	06	12	16902	S23	E38	269	1400	3.5										
80	06	13	16902	S21	E25	269	800	3.5										
80	06	14	16902	S23	E11	269	900	4.0		S24	E07				H	20	5	BXO
80	06	15	16902	S24	W02	270	1000	3.5										
80	06	16	16902	S26	W15	270	700	3.5		S25	W18				R	10	1	AXX
80	06	17	16902	S26	W24	265	900	3.5										
80	06	18	16902	S26	W38	265	600	3.5										
80	06	19	16902	S24	W52	266	400	3.0										
80	06	20	16902	S24	W65	265	400	2.5										

HALE REGION 16901 CMP DATE 15.5 RETURN OF 16849&LEADING PORTION 16850 ROTATION 3

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	9	16901	S14	E78	266	800	3.5	21522	S13	E78	268	(AP)	2	H	230	2	HHX
80	06	10	16901	S14	E68	266	1800	3.5	21522	S12	E65	268	(BP)	4	H	290	5	CAO
80	06	11	16901	S13	E55	265	3200	4.5	21522	S12	E50	270	(BP)	5	H	230	4	CSO
80	06	12	16901	S12	E41	266	3800	3.5	21522	S13	E35	272	(AP)	4	H	340	5	DKO
80	06	13	16901	S10	E27	267	3900	4.0	21522	S12	E23	270	(BP)	5	H	300	17	CKI
80	06	14	16901	S13	E12	268	4300	4.5	21522	S13	E10	270	(BP)	5	H	330	22	DKI
80	06	15	16901	S13	W01	269	3700	4.0	21522	S13	W04	270	(BP)	4	H	310	13	DKO
80	06	16	16901	S13	W13	268	2600	4.0	21522	S12	W28	281	(BP)	5	H	290	17	DHO
80	06	17	16901	S14	W26	267	2900	5.0	21522	S13	W33	274	(BP)	5	H	350	10	CSO
80	06	18	16901	S14	W41	268	3000	3.5	21522	S12	W46	273	(BP)	4	H	190	5	CSO
80	06	19	16901	S13	W52	266	2900	3.5	21522	S13	W61	275	(AP)	5	B	240	2	CHO
80	06	20	16901	S12	W68	268	2200	3.0	21522	S13	W78	278	(AP)	4	H	120	1	HHX
80	06	21	16901	S12	W75	262	600	3.0										

HALE REGION 16905 CMP DATE 15.7 RETURN OF REAR PORTION OF REGION 16851 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	10	16905	N18	E79	255	100	2.0										
80	06	11	16905	N18	E55	265	400	3.5										
80	06	12	16905	N18	E40	267	400	3.5		N16	E30				R	410	43	EKI
80	06	13	16905	N18	E26	268	300	3.5		N18	E21				M	190	10	ESO
80	06	14	16905	N17	E14	266	200	3.5										
80	06	15	16905	N17	E02	266	200	3.0										
80	06	16	16905	N17	W12	267	200	3.0		N17	W22				M	380	32	EHI
80	06	17	16905	N15	W25	266	200	3.0										
80	06	18	16905	N15	W38	265	100	3.5										
80	06	19	16905	N15	W51	265	200	3.0										

CONT

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16905 (CONT) CMP DATE 15.7 RETURN OF REAR PORTION OF REGION 16851 ROTATION 2

CALCIUM PLAGE DATA									SUNSPOT DATA									
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	20	16905	N17	W65	265	100	2.5										
80	06	21	16905	N17	W80	267	100	2.0										

HALE REGION 16915 CMP DATE 15.9

CALCIUM PLAGE DATA									SUNSPOT DATA									
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	14	16915	N23	E15	265	200	3.0										
80	06	15	16915	N23	E04	264	100	3.0										

HALE REGION 16899 CMP DATE 16.0

CALCIUM PLAGE DATA									SUNSPOT DATA									
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	9	16899	N27	E78	266	100	3.0										
80	06	10	16899	N26	E70	264	300	3.0										
80	06	11	16899	N27	E53	267	300	3.0										
80	06	12	16899	N27	E41	266	500	3.0										
80	06	13	16899	N29	E30	264	200	3.0										
80	06	14	16899	N28	E17	263	300	3.0										
80	06	15	16899	N28	E06	262	200	3.0										
80	06	16	16899	N28	W07	262	200	3.5										
80	06	17	16899	N27	W22	263	200	3.5										
80	06	18	16899	N25	W34	261	300	3.5										
80	06	19	16899	N26	W49	263	200	3.0										
80	06	20	16899	N28	W60	260	100	2.5										

HALE REGION 16910 CMP DATE 16.9 RETURN OF REGION 16852 ROTATION 3

CALCIUM PLAGE DATA									SUNSPOT DATA									
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	11	16910	N25	E69	251	400	3.5										
80	06	12	16910	N24	E56	251	1000	3.5										
80	06	13	16910	N27	E45	249	1000	3.5										
80	06	14	16910	N24	E28	252	1700	3.5										
80	06	15	16910	N24	E18	250	1400	3.5										
80	06	16	16910	N23	E05	250	1500	3.0										
80	06	17	16910	N23	W11	252	1400	3.0										
80	06	18	16910	N22	W24	251	1000	3.5										
80	06	19	16910	N24	W38	252	1100	3.5										
80	06	20	16910	N25	W53	253	700	3.0										
80	06	21	16910	N23	W66	253	700	3.0										
80	06	22	16910	N24	W78	248	300	2.5										

HALE REGION 16906 CMP DATE 17.2 RETURN OF REGIONS 16854 AND 16857 ROTATIONS 4 AND 8

CALCIUM PLAGE DATA									SUNSPOT DATA									
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	10	16906	N03	E79	255	300	2.0										
80	06	11	16906	N13	E66	254	900	2.0										
80	06	12	16906	N13	E57	250	1700	2.5										
80	06	13	16906	N16	E45	249	2100	3.0										
80	06	14	16906	N11	E31	249	2000	3.5										
80	06	15	16906	N12	E20	248	1500	3.5	21530	N17	E36	230	(AP)	2	H		1	AXX
80	06	16	16906	N10	E08	247	1000	3.0		N11	E11				M	10	2	BXO
80	06	17	16906	N10	W05	246	1500	3.5	21534	N11	E04	237	(BF)	3	H	50	4	DAO
80	06	18	16906	N12	W18	245	1800	3.5		N11	W08				H		1	AXX
80	06	19	16906	N12	W28	242	1600	3.0										
80	06	20	16906	N14	W43	243	1600	3.0										

CONT

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16906 (CONT) CMP DATE 17.2 RETURN OF REGIONS 16854 AND 16857 ROTATIONS 4 AND 8

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	21	16906	N13 W58	245	1200	2.0									
80	06	22	16906	N09 W68	238	600	2.5									

HALE REGION 16909 CMP DATE 17.9 RETURN OF TRAILING PORTION OF 16850 ROTATION 3

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	11	16909	S12 E75	245	200	2.5									
80	06	12	16909	S13 E65	242	300	3.0									
80	06	13	16909	S13 E53	241	700	3.0									
80	06	14	16909	S15 E40	240	800	3.5									
80	06	15	16909	S14 E28	240	600	3.0									
80	06	16	16909	S16 E15	240	800	3.0									
80	06	17	16909	S16 E04	237	1000	3.0									
80	06	18	16909	S17 W11	238	900	3.5									
80	06	19	16909	S16 W24	238	1000	3.0									
80	06	20	16909	S15 W38	238	700	3.0									
80	06	21	16909	S16 W53	240	500	3.0									
80	06	22	16909	S16 W62	232	400	2.5									

HALE REGION 16916 CMP DATE 18.3

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	14	16916	S06 E49	231	200	3.0									

HALE REGION 16929 CMP DATE 18.8

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	21	16929	S17 W37	224	100	3.5	21545	S17 W37	224	(B)	3	H	30	2	CRO
80	06	22	16929	S17 W50	220	300	3.0	21545	S17 W52	227	AP	1	H	10	1	AXX
80	06	23	16929	S18 W62	224	100	2.5									

HALE REGION 16911 CMP DATE 19.0 RETURN OF 16859 & LEADING PORTION 16858 ROTATION 2

				CALCIUM PLAGE DATA					SUNSPOT DATA							
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	12	16911	N19 E79	228	200	3.0		N19 E85				P	40	1	HAX
80	06	13	16911	N19 E70	224	2100	4.0	21529	N17 E72	221	(AP)	4	H	60	1	HSX
80	06	14	16911	N16 E59	221	4300	5.0	21529	N16 E59	221	(AP)	4	H	60	81	HSX
80	06	15	16911	N16 E46	222	3000	4.0	21529	N16 E45	221	(AP)	4	H	80	2	HAX
80	06	16	16911	N17 E35	220	3400	3.5	21529	N16 E33	220	(AP)	3	H	80	4	CSO
80	06	17	16911	N17 E18	223	4000	4.0	21529	N16 E20	221	(BP)	4	H	70	11	CAO
80	06	18	16911	N17 E06	221	6500	4.0	21529	N17 E07	220	(BP)	4	H	140	13	ESI
80	06	19	16911	N18 W08	222	4600	4.0	21538	N22 E03	211	(BY)	3	B	30	8	BXO
80	06	19	16911	N18 W08	222	4600	4.0	21529	N19 W05	219	(AP)	4	B	100	15	CSI
80	06	20	16911	N18 W18	218	5100	4.0	21538	N23 W12	212	(B)	3	H	120	16	DAI
80	06	20	16911	N18 W18	218	5100	4.0	21529	N18 W20	220	(B)	4	H	110	10	CAO
80	06	21	16911	N18 W32	219	5600	4.0	21529	N18 W33	220	(AP)	4	H	70	1	HAX
80	06	21	16911	N18 W32	219	5600	4.0	21538	N22 W25	212	(BP)	4	H	130	14	DAO
80	06	22	16911	N18 W42	212	5100	4.0	21529	N18 W45	220	(AP)	4	H	60	1	HAX
80	06	22	16911	N18 W42	212	5100	4.0	21538	N22 W38	213	(B)	5	H	150	9	DKI
80	06	23	16911	N18 W52	214	4900	4.0	21529	N18 W61	222	(BP)	4	H	20	3	CSO
80	06	23	16911	N18 W52	214	4900	4.0	21538	N22 W52	213	(BF)	5	H	310	21	EAI
80	06	24	16911	N19 W66	215	4200	4.0	21538	N22 W65	213	(B)	4	H	180	5	EAI
80	06	24	16911	N19 W66	215	4200	4.0	21529	N18 W77	225	BP	3	H		1	AXX
80	06	25	16911	N20 W75	211	3200	4.0	21538	N22 W73	208	(BF)	4	H	30	3	CRO

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16913 CMP DATE 19.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	13	16913	S09 E75	219	500	3.5									
80	06	14	16913	S12 E59	221	1200	3.5									
80	06	15	16913	S12 E47	221	1100	3.5									
80	06	16	16913	S12 E36	219	1000	3.0									
80	06	17	16913	S12 E23	218	1100	3.5									
80	06	18	16913	S12 E06	221	800	3.5									
80	06	19	16913	S11 W08	222	800	3.0									
80	06	20	16913	S12 W22	222	700	3.0									
80	06	21	16913	S12 W35	222	500	3.0		S14 W33				B	30	2	BXO
80	06	22	16913	S13 W47	217	500	2.5		S18 W51				H	10	1	AXX
80	06	23	16913	S14 W61	223	400	2.5									
80	06	24	16913	S15 W78	227	100	2.0									

HALE REGION 16925 CMP DATE 19.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	19	16925	N12 W07	221	100	2.0		N17 W04				R	90	11	DAO
80	06	20	16925	N12 W18	218	200	3.0		N17 W19				H	110	10	CAO
80	06	21	16925	N11 W34	221	100	3.0		N16 W35				H	70	1	HAX
80	06	22	16925	N10 W45	215	100	3.0		N13 W47				B	40	1	HSX
80	06	23	16925	N12 W58	220	100	2.5		N16 W61				H	20	3	CSO
80	06	24	16925	N12 W75	224	100	1.5		N16 W76				H		1	AXX

HALE REGION 16924 CMP DATE 19.7 RETURN OF LEADING EDGE OF REGION 16860 ROTATION 2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	18	16924	S24 E14	213	100	2.5		S25 E15				R	10	2	BXO

HALE REGION 16912 CMP DATE 20.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	13	16912	N38 E77	217	200	3.0									
80	06	14	16912	N34 E65	215	500	3.5									
80	06	15	16912	N34 E57	211	500	3.0									
80	06	16	16912	N34 E43	212	500	3.0									
80	06	17	16912	N35 E28	213	600	3.0									
80	06	18	16912	N35 E18	209	700	3.5									
80	06	19	16912	N35 E05	209	600	3.0									
80	06	20	16912	N35 W08	208	700	3.0									
80	06	21	16912	N35 W23	210	500	2.5									
80	06	22	16912	N35 W33	203	500	2.5									
80	06	23	16912	N35 W44	206	400	2.5									
80	06	24	16912	N35 W58	207	500	1.5									
80	06	25	16912	N35 W69	205	100	1.5									

HALE REGION 16919 CMP DATE 20.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	17	16919	S25 E35	206	200	3.0									
80	06	18	16919	S24 E18	209	200	3.0		S26 E26				H		2	AXX
80	06	19	16919	S25 E06	208	200	3.0									
80	06	20	16919	S26 W08	208	300	3.0									
80	06	21	16919	S23 W22	209	200	3.5		S22 W22				B	20	3	BXO
80	06	22	16919	S24 W34	204	200	3.5									
80	06	23	16919	S24 W45	207	300	3.0		S26 W46				B	10	1	AXX

CONT

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16919 (CONT) CMP DATE 20.1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	24	16919	S24	W61	210	400	3.0										
80	06	25	16919	S23	W72	208	200	3.0										

HALE REGION 16930 CMP DATE 20.1

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	21	16930	S20	W20	207	100	3.5		S18	W20				B	10	1	AXX
80	06	22	16930	S18	W34	204	100	3.0		S14	W41				M	10	2	BXO
80	06	23	16930	S20	W43	205	100	2.5										

HALE REGION 16914 CMP DATE 20.4 NEW REGION IN LOCATION OF TRAILING PART OF REGION 16855

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	13	16914	S28	E79	215	200	2.0										
80	06	14	16914	S33	E65	215	400	3.5										
80	06	15	16914	S32	E54	214	300	2.5										
80	06	16	16914	S32	E42	213	300	3.0										
80	06	17	16914	S33	E35	206	400	3.0										
80	06	18	16914	S35	E26	201	700	3.0										
80	06	19	16914	S33	E13	201	500	3.0										
80	06	20	16914	S35	W03	203	900	3.0										
80	06	21	16914	S35	W13	200	400	3.0										
80	06	22	16914	S36	W24	194	800	3.0										
80	06	23	16914	S36	W34	196	500	3.0										
80	06	24	16914	S35	W42	191	500	3.0										
80	06	25	16914	S35	W53	189	200	2.0										

HALE REGION 16917 CMP DATE 20.8 RETURN OF REGION 16860 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	14	16917	S24	E78	202	900	3.5										
80	06	15	16917	S25	E66	202	800	3.0										
80	06	16	16917	S22	E52	203	500	3.0										
80	06	17	16917	S24	E44	197	1200	3.5										
80	06	18	16917	S24	E29	198	1400	3.0		S26	E26				H		2	AXX
80	06	19	16917	S23	E16	198	1400	3.0										
80	06	20	16917	S24	E02	198	2000	3.0										
80	06	21	16917	S24	W08	195	1400	3.5										
80	06	22	16917	S24	W18	188	1800	3.0										
80	06	23	16917	S24	W28	190	1600	3.0		S20	W18				P	10	3	BXO
80	06	24	16917	S24	W46	195	1500	3.0										
80	06	25	16917	S24	W58	194	800	3.0										

HALE REGION 16918 CMP DATE 22.0 RETURN OF 16862,16863&NORTH PART 16864 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	15	16918	S11	E78	190	1000	3.5	21531	S08	E71	195	(AP)	3	H		1	AXX
80	06	15	16918	S11	E78	190	1000	3.5	21532	S12	E86	180	AP	1	H	30	1	HAX
80	06	16	16918	S11	E68	187	2400	4.0	21531	S08	E59	194	(AP)	3	H	10	2	CRO
80	06	16	16918	S11	E68	187	2400	4.0	21532	S13	E71	182	(AP)	3	H	90	4	DRO
80	06	17	16918	S10	E57	184	4300	4.0	21532	S12	E59	182	(BP)	3	H	260	10	CAO
80	06	17	16918	S10	E57	184	4300	4.0	21531	S08	E47	194	(AP)	3	H	90	4	DSO
80	06	18	16918	S10	E42	185	5200	4.0	21532	S12	E46	181	(B)	3	H	200	10	DAO
80	06	18	16918	S10	E42	185	5200	4.0	21531	S08	E33	194	(AP)	3	H	30	2	BXO
80	06	19	16918	S11	E30	184	6100	4.0	21531	S08	E20	194	(AP)	3	B	30	2	BXO

CONT

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16918 (CONT) CMP DATE 22.0 RETURN OF 16862,16863&NORTH PART 16864 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	19	16918	S11 E30	184	6100	4.0	21532	S12 E33	181	(BP)	3	B	70	14	DAI
80	06	19	16918	S11 E30	184	6100	4.0	21539	S17 E37	177	(B)	3	B	120	8	DAO
80	06	20	16918	S13 E17	183	6300	4.0	21532	S13 E17	183	(BP)	3	H	170	26	EAI
80	06	20	16918	S13 E17	183	6300	4.0	21531	S08 E06	194	(AP)	3	H	20	3	CRO
80	06	20	16918	S13 E17	183	6300	4.0	21539	S16 E21	179	(B)	3	H	40	10	CRO
80	06	20	16918	S13 E17	183	6300	4.0	21541	S09 E16	184	(B)	4	H	170	26	EAI
80	06	21	16918	S13 E04	183	8100	4.0	21541	S10 E03	184	(D)	4	H	50	5	CRO
80	06	21	16918	S13 E04	183	8100	4.0	21539	S16 E07	180	(AP)	3	H	110	12	CAO
80	06	22	16918	S13 W12	182	5500	4.0	21541	S10 W10	185	(D)	4	H	80	9	CAO
80	06	23	16918	S13 W22	184	6100	3.5	21541	S11 W25	186	(BF)	4	H	20	5	BXO
80	06	24	16918	S13 W35	184	5900	3.5	21541	S11 W36	184	(BP)	4	H	60	5	CAI
80	06	25	16918	S13 W48	184	4700	3.5	21541	S13 W50	185	(BF)	3	H	20	4	BXO
80	06	26	16918	S14 W63	181	1600	3.0	21552	S20 W58	180	(AP)	3	H	50	6	CRO
80	06	27	16918	S14 W75	182	1000		21552	S21 W70	179	(AP)	4	H	30	1	HRX

HALE REGION 16926 CMP DATE 22.4

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	19	16926	N11 E38	176	100	2.0									
80	06	20	16926	N10 E23	177	100	2.0									

HALE REGION 16923 CMP DATE 23.3 REAR PORTION NEW,FRONT PORTION 16864 ROTATIONS 1 AND 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	16	16923					21533	S20 E80	173	AP	2	H	40	1	HAX
80	06	17	16923	S22 E73	168	1000	3.5	21536	S27 E77	164	B	2	H	20	3	CSO
80	06	17	16923	S22 E73	168	1000	3.5	21533	S20 E69	172	(BP)	4	H	70	3	CSO
80	06	18	16923	S25 E60	167	2900	4.0	21533	S21 E55	172	(AP)	4	H	120	0	HSX
80	06	18	16923	S25 E60	167	2900	4.0	21536	S28 E64	163	(B)	3	H	80	12	ESI
80	06	19	16923	S25 E48	166	4100	3.5	21533	S21 E43	171	(AP)	4	B	120	8	DAO
80	06	19	16923	S25 E48	166	4100	3.5	21536	S28 E49	165	(B)	4	B	400	23	EKI
80	06	20	16923	S28 E34	166	5600	4.5	21533	S20 E29	171	(AP)	4	H	110	5	CSO
80	06	20	16923	S28 E34	166	5600	4.5	21536	S28 E36	164	(B)	4	H	550	37	EKI
80	06	21	16923	S26 E22	165	6200	4.0	21536	S27 E23	164	(B)	4	H	600	33	EKI
80	06	21	16923	S26 E22	165	6200	4.0	21533	S20 E16	171	(AP)	4	H	80	2	HSX
80	06	22	16923	S26 E10	160	5500	4.0	21536	S27 E09	166	(BP)	5	H	530	26	EKI
80	06	22	16923	S26 E10	160	5500	4.0	21533	S20 E02	173	(BP)	5	H	90	9	CAO
80	06	23	16923	S26 W04	166	5700	4.0	21536	S27 W05	166	(BP)	5	H	620	32	FKI
80	06	23	16923	S26 W04	166	5700	4.0	21533	S20 W10	171	(BP)	5	H	100	6	DSO
80	06	24	16923	S26 W15	164	5800	5.0	21533	S21 W22	170	(AP)	5	H	90	1	HHX
80	06	24	16923	S26 W15	164	5800	5.0	21536	S28 W18	166	(BP)	5	H	520	21	FAI
80	06	25	16923	S26 W28	164	6300	4.5	21533	S22 W34	169	(AP)	5	H	60	3	CAO
80	06	25	16923	S26 W28	164	6300	4.5	21536	S28 W30	165	(BY)	5	H	600	38	FKI
80	06	26	16923	S26 W47	165	5900	3.5	21533	S22 W48	170	(AP)	4	H	40	1	HSX
80	06	26	16923	S26 W47	165	5900	3.5	21536	S28 W48	170	(D)	4	H	500	29	FKI
80	06	27	16923	S28 W52	159	2200		21536	S28 W59	168	(BP)	4	H	480	18	FKI
80	06	27	16923	S28 W52	159	2200		21533	S21 W60	169	(AP)	4	H	40	1	HAX
80	06	28	16923					21536	S32 W55	150	(B)	3	H	310	12	FKI

HALE REGION 16921 CMP DATE 23.9 RETURN OF REGION 16866 ROTATION 2

			CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	17	16921	N13 E78	163	400	2.5									
80	06	18	16921	N12 E67	160	1200	3.0									
80	06	19	16921	N13 E52	162	2200	3.0									
80	06	20	16921	N11 E42	158	2800	3.5									
80	06	21	16921	N13 E27	160	3600	3.5									
80	06	22	16921	N13 E15	155	2800	3.5									
80	06	23	16921	N13 E04	158	2700	3.5									
80	06	24	16921	N13 W11	160	3300	3.5		N18 W02				H		1	AXX

CONT

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16921 (CONT) CMP DATE 23.9 RETURN OF REGION 16866 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	25	16921	N13	W24	160	3100	3.5
80	06	26	16921	N14	W38	156	1400	3.0
80	06	27	16921	N15	W50	157	1000	
80	06	28	16921					
80	06	29	16921					

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N10	W19				R	260	9	CSO
21553	N14	W52	161	(B)	4	H	80	9	DAO
21553	N13	W69	164	(BP)	3	H	120	4	CAO
21553	N13	W80	162	(B)	2	B	20	1	HSX

HALE REGION 16931 CMP DATE 23.9 RETURN OF SOUTH CENTER PORTION OF 16865 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	21	16931	S20	E28	159	1000	3.5
80	06	22	16931	S22	E17	153	2000	4.5
80	06	23	16931	S21	E04	158	2000	4.0
80	06	24	16931	S21	W07	156	1900	5.0
80	06	25	16931	S22	W22	158	2500	5.0
80	06	26	16931	S21	W37	155	600	3.0
80	06	27	16931	S22	W45	152	600	
80	06	28	16931					
80	06	29	16931					

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21546	S22	E33	154	B	1	H	40	2	BXO
21546	S23	E15	160	(B)	5	H	100	9	DAO
21546	S23	E04	157	(BP)	5	H	200	20	DAI
21546	S23	W11	159	(BP)	5	H	240	13	EAI
21546	S24	W23	158	(BP)	5	H	240	31	EAI
21546	S24	W38	160	(BP)	4	H	230	19	EAI
21546	S23	W50	159	(BP)	4	H	210	24	EAI
21546	S24	W60	155	(BP)	3	H	120	10	EAO
21546	S24	W77	159	(AP)	3	B	40	3	BXO

HALE REGION 16920 CMP DATE 24.0

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	17	16920	N23	E79	162	300	2.0
80	06	18	16920	N24	E69	158	800	3.5
80	06	19	16920	N25	E57	157	900	3.5
80	06	20	16920	N23	E44	156	1200	3.5
80	06	21	16920	N24	E28	159	2600	3.5
80	06	22	16920	N24	E18	152	1100	3.5
80	06	23	16920	N24	E06	156	1000	3.0
80	06	24	16920	N24	W06	155	1000	3.5
80	06	25	16920	N24	W19	155	1100	3.5
80	06	26	16920	N24	W38	156	700	3.0
80	06	27	16920	N25	W48	155	300	

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21535	N24	E80	161	AP	1	B	20	1	AXX
21535	N24	E68	159	(AP)	3	H	10	3	BXO
21535	N24	E55	159	(AP)	3	B	20	2	HSX
21535	N25	E42	158	(AP)	3	H	20	3	AXX
21535	N25	E28	159	(AP)	3	H	10	2	AXX
21535	N25	E19	156	(AP)	3	H	40	3	BXO
	N25	E04				R	10	1	AXX

HALE REGION 16922 CMP DATE 24.9 RETURN OF REGION 16865 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	17	16922	S12	E78	163	200	2.0
80	06	18	16922	S15	E69	158	1200	3.0
80	06	19	16922	S15	E56	158	1400	3.0
80	06	20	16922	S17	E45	155	2700	3.5
80	06	21	16922	S16	E34	153	2300	3.0
80	06	22	16922	S16	E28	142	1900	3.5
80	06	23	16922	S16	E14	148	2300	3.5
80	06	24	16922	S18	E05	144	2300	3.5
80	06	25	16922	S18	W09	145	2300	4.0
80	06	26	16922	S20	W26	144	1600	3.5
80	06	27	16922	S19	W40	147	900	

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21537	S12	E73	154	(AP)	4	B	50	1	HSX
21537	S13	E60	154	(AP)	4	B	30	1	HSX
21537	S12	E46	154	(AP)	4	H	40	1	HSX
21537	S12	E32	155	(AP)	4	H	40	1	HAX
21537	S12	E19	156	(AP)	4	H	30	1	HSX
21537	S12	E07	154	(AP)	4	H	20	1	HSX
21537	S12	W07	155	(AP)	4	H	20	1	HAX
21550	S22	W09	144	(B)	2	R	10	1	AXX
21550	S22	W22	144	(AF)	2	P	10	1	AXX
	S22	W50				H	210	24	EAI

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16933 CMP DATE 26.0

CLASS	YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
					CALCIUM PLAGE DATA					SUNSPOT DATA									
CSO	80	06	20	16933						21543	S13	E76	124	(AP)	4	H	570	6	DHO
	80	06	21	16933	S15	E57	130	1100	4.0	21543	S13	E61	126	(BP)	5	H	620	12	EKO
DAO	80	06	22	16933	S16	E47	123	1400	4.0	21543	S13	E49	126	(BP)	6	H	620	16	EKI
CAO	80	06	23	16933	S15	E35	127	1300	3.5	21543	S13	E36	125	(BP)	5	H	640	18	FKI
HSX	80	06	24	16933	S15	E22	127	2000	3.5	21543	S13	E23	125	(BP)	6	H	490	15	CKI
	80	06	25	16933	S16	E06	130	900	3.5	21543	S13	E10	125	(BP)	5	H	490	16	DKO
	80	06	26	16933	S16	W11	129	1300	3.0	21543	S15	W03	125	(BP)	5	H	450	14	CKO
	80	06	27	16933	S15	W23	130	300		21543	S14	W16	125	(AP)	5	H	400	6	CKO
	80	06	28	16933						21543	S13	W30	125	(BP)	5	H	400	5	DKO
	80	06	29	16933						21543	S13	W43	125	(BP)	5	H	440	3	DAI
	80	06	30	16933	S17	W71	136	100	2.0		S14	W66				H	420	4	CHI
	80	07	1	16933						21543	S15	W69	125	(BP)	4				
CLASS	80	07	2	16933						21543	S14	W80	123	AP	2	H	100	1	HSX
BXO																			
DAO																			
DAI	HALE REGION 16934						CMP DATE 26.5												
EAI																			
EAI					CALCIUM PLAGE DATA					SUNSPOT DATA									
EAI	YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
EAO	80	06	22	16934	N16	E42	128	100	2.0										
BXO	80	06	23	16934	N16	E31	131	100	2.0										
	80	06	24	16934	N18	E26	123	200	2.0										

HALE REGION 16927 CMP DATE 26.7 RETURN OF REGION 16867 ROTATION 2

CLASS	YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
					CALCIUM PLAGE DATA					SUNSPOT DATA									
AXX	80	06	20	16927	S10	E78	122	1200	4.0	21544	S10	E82	118	AP	2	H	570	6	DHO
BXO	80	06	21	16927	S10	E68	119	5400	4.5	21544	S09	E68	119	(B)	4	H	620	12	EKO
HSX	80	06	22	16927	S10	E56	114	5700	4.5	21544	S09	E56	119	(BP)	4	H	620	16	EKI
AXX	80	06	23	16927	S10	E43	119	6200	4.0	21544	S10	E43	118	(BP)	5	H	640	18	FKI
AXX	80	06	24	16927	S11	E32	117	7100	3.5	21544	S10	E30	118	(BP)	5	H	180	10	DAI
BXO	80	06	25	16927	S12	E18	118	7100	4.5	21544	S10	E18	117	(BP)	5	H	170	16	DSI
AXX	80	06	26	16927	S12	W02	120	5000	3.5	21544	S11	E03	119	(B)	4	H	180	22	DSO
	80	06	27	16927	S13	W11	118	4100		21544	S10	W12	121	(BP)	5	H	180	21	CHO
	80	06	28	16927						21544	S10	W24	119	(BP)	4	H	120	5	CSO
	80	06	29	16927						21544	S10	W37	119	(BP)	4	H	110	3	CAO
	80	06	30	16927	S13	W52	117	4200	3.5		S11	W51				H	100	1	HSX
	80	07	1	16927						21544	S10	W65	121	(AP)	4				
	80	07	2	16927	S15	W74	114	1300	3.5	21544	S10	W77	120	(AP)	2	H	60	1	HSX
	80	07	3	16927	S19	W85	112	500	3.5		S22	W80				H	70	2	DAO

CLASS	HALE REGION 16928						CMP DATE 27.1												
HSX																			
HSX					CALCIUM PLAGE DATA					SUNSPOT DATA									
HSX	YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
HAX	80	06	20	16928	S18	E77	123	1600	4.0	21542	S20	E80	120	AP	2	H	20	1	HRX
HSX	80	06	21	16928	S18	E68	119	2700	4.5	21542	S21	E68	119	(B)	3	H	40	7	BXO
HSX	80	06	22	16928	S18	E57	113	2600	4.5	21542	S21	E57	118	(BP)	3	H	90	6	DAO
HAX	80	06	23	16928	S18	E45	117	3200	3.5	21542	S21	E45	116	(BP)	4	H	80	5	DSO
AXX	80	06	24	16928	S21	E32	117	1800	4.0	21542	S20	E30	118	(BP)	3	H	20	4	BXO
AXX	80	06	25	16928	S21	E18	118	2100	4.0	21542	S20	E17	118	(BF)	3	H	40	7	CRO
EAI	80	06	26	16928	S22	E02	116	1700	3.5	21542	S20	E05	117	(B)	3	H	20	5	BXO
	80	06	27	16928	S22	W07	114	800			S21	W04				R		2	BXO
	80	06	28	16928						21557	S21	W20	115	(B)	2	M	20	11	BXO
	80	06	29	16928						21557	S18	W31	113	(AF)	2	M	20	4	BXO
	80	06	30	16928	S22	W58	123	700	3.5										
	80	07	1	16928						21557	S21	W54	110	(BF)	3				
	80	07	2	16928	S22	W70	110	400	3.5	21557	S21	W66	109	(BF)	3	H	100	5	DAO
	80	07	3	16928						21557	S22	W78	107	BF	2	H	70	2	DAO

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16950 CMP DATE 27.3

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	27	16950	N20	W05	112	100	
80	06	30	16950	N19	W45	110	100	2.5
80	07	2	16950	N20	W70	110	200	3.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS

HALE REGION 16942 CMP DATE 27.5 NEW REGION IN LOCATION OF REGION 16868

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	26	16942	N12	E08	110	200	3.0
80	06	27	16942	N12	W03	110	200	
80	06	30	16942	N12	W44	109	100	1.5
80	07	2	16942	N12	W70	110	100	1.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	N12	E13				B	40	4	DSO
	N12	W01				H	50	4	DAO

HALE REGION 16936 CMP DATE 28.2

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	22	16936	S15	E74	96	100	2.5
80	06	23	16936	S14	E64	98	200	2.5
80	06	24	16936	S14	E48	101	500	2.5
80	06	25	16936	S15	E35	101	400	2.5
80	06	26	16936	S15	E16	102	200	2.5
80	06	27	16936	S14	E07	100	200	
80	06	30	16936	S14	W34	99	200	3.0
80	07	2	16936	S14	W60	100	100	2.5
80	07	3	16936	S14	W70	97	100	1.0

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21551	S15	E38	97	AP	2	H	20	3	BXO
21551	S16	E22	100	B	3	H		1	AXX
	S10	W44				M	90	1	HSX
	S19	W65				B	110	5	DAO
	S10	W62				H	130	11	EAI

HALE REGION 16935 CMP DATE 28.6 RETURN OF PART OF 16871, REST IS NEW ROTATIONS 4 AND 1

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	21	16935	N12	E78	109	300	2.0
80	06	22	16935	N13	E70	100	500	3.0
80	06	23	16935	N14	E62	100	1200	2.5
80	06	24	16935	N16	E52	97	1400	3.0
80	06	25	16935	N15	E40	96	1100	3.0
80	06	26	16935	N15	E18	100	900	3.0
80	06	27	16935	N16	E08	99	800	
80	06	28	16935					
80	06	29	16935					
80	06	29	16935					
80	06	30	16935	N17	W29	94	1200	3.0
80	07	2	16935	N18	W55	95	700	3.0
80	07	3	16935	N18	W66	93	300	1.5
80	07	4	16935	N20	W74	89	200	2.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
21547	N13	E80	107	AP	1	H	10	1	AXX
21547	N13	E68	107	(AP)	3	H	40	1	HSX
21547	N13	E56	105	(AP)	4	H	30	1	HSX
21547	N13	E43	105	(AP)	4	H	20	1	HSX
21547	N13	E28	107	(BP)	4	H	70	6	DAO
21547	N12	E15	107	(BP)	4	B	40	4	DSO
21547	N12	E02	107	BP	5	B	30	3	BXO
21547	N13	W11	106	(AP)	3	H	30	2	CRO
21562	N18	W09	91	(AP)	2	M	10	1	HRX
21547	N11	W29	111	(AP)	2	B	10	1	AXX

HALE REGION 16940 CMP DATE 29.0

CALCIUM PLAGE DATA

YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT
80	06	25	16940	S08	E45	91	200	2.5

SUNSPOT DATA

MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
	S13	E37				P	10	1	AXX

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16943 CMP DATE 29.0

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	26	16943	S11 E25	93	100	3.0			S15 E23				H		1	AXX
80	06	27	16943	S10 E14	93	100											
80	06	28	16943						21559	S09 E07	88	(B)	4	H	90	13	DAO
80	06	29	16943						21559	S10 W07	89	(B)	4	H	170	9	DAI
80	06	30	16943	S10 W24	89	1600	3.5			S10 W21				H	360	23	DKI
80	07	1	16943						21559	S10 W34	90	(B)	4	H	480	20	EKI
80	07	2	16943	S10 W30	70	1200	3.5		21559	S10 W47	90	(D)	4	H	270	13	EAI
80	07	3	16943	S09 W62	89	1200	3.0		21559	S10 W61	90	(B)	3	H	130	11	EAI
80	07	4	16943	S09 W75	90	1000	3.0		21559	S10 W74	90	B	3	H	80	2	EAO

HALE REGION 16944 CMP DATE 29.1

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	26	16944	N11 E28	90	200	3.5			N13 E23				M	30	7	DSO
80	06	27	16944	N10 E18	89	100			21554	N13 E20	89	B	2	H	20	2	BXO
80	06	30	16944	N10 W23	88	100	3.0										

HALE REGION 16937 CMP DATE 29.8 RETURN OF REGION 16871 ROTATION 4

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	23	16937	N22 E72	90	400	1.5										
80	06	24	16937	N22 E60	89	600	2.5										
80	06	25	16937	N22 E47	89	1000	3.0										
80	06	26	16937	N23 E33	85	700	3.0										
80	06	27	16937	N25 E26	81	600											
80	06	30	16937	N24 W14	79	700	3.0										
80	07	2	16937	N24 W40	80	600	2.5										
80	07	3	16937	N25 W50	77	200	1.5										
80	07	4	16937	N29 W60	75	200	1.5										

HALE REGION 16947 CMP DATE 30.2

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	26	16947	S12 E43	75	100	2.0			S17 E50				P	30	1	HSX
80	06	27	16947	S12 E33	74	200				S12 E33				H	20	2	BXO

HALE REGION 16938 CMP DATE 30.5

				CALCIUM PLAGE DATA					SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	24	16938	N18 E78	71	500	3.5		21548	N20 E78	70	(D)	4	H	390	1	HKX
80	06	25	16938	N18 E65	71	600	3.5		21548	N18 E64	71	(B)	4	H	390	5	DKC
80	06	26	16938	N18 E45	73	600	3.5		21548	N17 E50	72	(BP)	4	H	200	8	DKC
80	06	27	16938	N18 E35	72	600			21548	N18 E38	71	(BP)	5	H	200	11	DKO
80	06	28	16938						21548	N17 E25	70	(D)	4	H	180	16	CAO
80	06	29	16938						21548	N17 E11	71	(BP)	4	H	80	3	DSI
80	06	30	16938	N17 W05	70	900	3.5			N18 W04				H	60	2	CSI
80	07	1	16938						21548	N17 W15	71	(AP)	5				
80	07	2	16938	N17 W30	70	700	3.5		21548	N17 W28	71	(AP)	4	H	60	1	HSX
80	07	3	16938	N17 W44	71	700	3.5		21548	N18 W42	71	(AP)	4	H	50	1	HSX
80	07	4	16938	N17 W56	71	500	3.0		21548	N18 W55	71	(AP)	4	H	70	1	HAX
80	07	5	16938	N17 W70	70	500	3.0		21548	N18 W67	70	(AP)	3	H	20	1	HSX
80	07	6	16938	N17 W80	67	400	3.0		21548	N18 W80	69	AP	1	R	30	1	AXX

176
Late
Jun 80

REGIONS OF SOLAR ACTIVITY

JUNE 1980

HALE REGION 16951 CMP DATE 30.5 RETURN OF LEADING EDGE OF REGION 16873 ROTATION 3

				CALCIUM PLAGE DATA						SUNSPOT DATA								
YR	MO	DA	HL NO.	LAT	CMD	L	AREA	INT	MW NO.	LAT	CMD	L	MAG.	H	STA	AREA	CNT	CLASS
80	06	27	16951	S26	E42	65	200											
80	06	30	16951	S26	W05	70	400	3.0										
80	07	2	16951	S26	W28	68	300	2.5										
80	07	3	16951	S25	W41	68	200	1.5		S20	W34				P	100	11	DSO

NOTE: NO CALCIUM SPECTROHELIOGRAMS WERE SECURED AT THE MT. WILSON OBSERVATORY ON JUNE 28 AND 29, 1980. SACRAMENTO PEAK OBSERVATORY PHOTOGRAPHS WERE USED FOR THE JUNE 10-25, 1980 CLACIUM PLAGE DRAWINGS. NO SUNSPOT OBSERVATIONS WERE MADE AT MT. WILSON ON JUNE 30, 1980.

REMARKS: NONE

CONTIGUOUS PLAGES FOR JUNE 1980: 16884 - 16904
16918 - 16923
16927 - 16928 - 16933

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
01	0410	1405	BLEN	0518.8	0520.0	1	0518.8	0520.0	2				IIIB
			BLEN	0724.0	0726.9	1							IIIGG
			BLEN	0755.6	0755.7	1	0755.6	0755.7	1				IIIG
	0410	1655	WEIS				0829.2	0829.7	2				IIIG
			BLEN	0841.6	0841.8	2	0841.6	0841.8	2				IIIG
			WEIS				0841.6	0841.8	2				IIIG
			BLEN	1129.1	1130.1	1	1129.1	1130.1	1				IIIB
			WEIS				1140.9	1141.1	1				IIIB
			WEIS	1626.9	1627.6	2							
			WEIS				1627.8	1648.0	3				II HARM
	1701	1842	WEIS										
02	0410	0440	BLEN										
	0411	1842	WEIS				0506.7	0507.2	2				IIIG
			WEIS				0634.6	0634.8	2				IIIB
			WEIS				1023.4	1024.4	2				IIIG
			WEIS				1028.7	1028.9	2				U
	0903	1810	BLEN	1118.4	1122.9	1	1118.4	1122.9	1				IIIG
			BLEN	1214.5	1214.9	1	1214.5	1214.9	1				IIIG
			BLEN	1422.5	1441.6	2							DCIM
			BLEN	1519.5	1528.3	2							DCIM
			WEIS				1556.2	1557.4	1				IIIG
			BLEN	1728.9	1730.7	2	1728.9	1730.7	2				IIIGG
			WEIS				1729.0	1730.9	3				IIIG
			WEIS				1822.6	1822.7	2				IIIB
03	0410	1805	BLEN				0410 E	1805 D	1				I
	0411	0703	WEIS				0600.5	0600.9	2				IIIG
			WEIS				0612.6	0613.6	1				IIIG
			WEIS				0624.7	0625.4	1				IIIG
			BLEN				0624.8	0627.5	1				IIIG
			WEIS				0627.5	0627.6	1				IIIB
			BLEN	0704.5	0705.1	1	0704.5	0705.1	1				IIIG
			BLEN				0739.1	0739.4	1				IIIG
	0816	1842	WEIS				1047.1	1047.2	1				IIIB
			BLEN				1252.3	1254.5	2				IIIGG
			WEIS				1253.0	1254.6	3				IIIG
			BLEN				1736.8	1737.2	2				IIIG
			WEIS				1755.3	1755.4	1				IIIB
			WEIS				1817.3	1817.7	2				IIIB
			WEIS				1830.5	1830.8	2				IIIB
			WEIS				1833.3	1833.7	2				IIIG
			WEIS				1838.9	1839.5	2				IIIG
04	0411	1329	WEIS										
	0536	0715	BLEN				0536 E	1805 D	1				I
	1400	1805	BLEN										
	1638	1842	WEIS										
05	0415	1805	BLEN	0415 E	0800	1	0415 E	0800	1				I
	0409	1843	WEIS				0421	1837	2				IIIN
			BLEN	0736.0	0747.4	2	0736.0	0800.0	2				IV,P,Z,F
			WEIS				0736.2	0748.3	3				IIIGG
			BLEN	1100.8	1111.8	1							DCIM
			BLEN				1110.5	1110.6	1				IIIG
			BLEN	1552.0	1609.2	1	1552.0	1609.2	2				IIIGG,DCIM
06	0409	0738	WEIS				0410	1734	2				IN
	0415	0441	BLEN	0415 E	0441 D	2	0415 E	0441 D	2				I,DC
			BLEN	0418.1	0432.5	1							DCIM
	0745	1843	WEIS				0419	1339	2				IIIN
			BLEN				0419.2	0440.8	2				IIIG
	1224	1805	BLEN										
07	0410	1332	WEIS				0456.7	0456.9	2				IIIG
			WEIS				0508.9	0509.2	1				IIIB
			WEIS				0558.8	0559.0	2				IIIB
	0415	1805	BLEN	0658.7	0658.8	1	0658.7	0658.8	1				IIIG
			BLEN	0751.5	0751.7	1							IIIG
			WEIS				0801.9	0802.2	2				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1980

DAY	TIMES OF OBSERVATION START UT	TIMES OF OBSERVATION END UT	STATION	EVENTS: DECIMETRIC BAND START UT	DECIMETRIC BAND END UT	DECIMETRIC BAND INT	METRIC BAND START UT	METRIC BAND END UT	METRIC BAND INT	DEKAMETRIC BAND START UT	DEKAMETRIC BAND END UT	DEKAMETRIC BAND INT	SPECTRAL TYPE
07			BLEN	0843.0	0843.9	1							IIIG
			BLEN				0942.0	0942.2	2				IIIB
			WEIS				0942.1	0942.3	2				IIIG
			BLEN	0946.1	0950.1	1							IIIG
			BLEN				0958.5	1017.0	1				IIIGG
			WEIS				1015.3	1017.4	2				IIIGG
			BLEN	1116.7	1119.2	1							IIIG
			BLEN	1141.2	1151.5	1	1141.7	1152.1	2				IIIGG
			WEIS				1143.9	1144.3	2				IIIB
			BLEN	1231.8	1231.9	1							IIIG
			BLEN	1310.3	1312.5	1	1310.3	1312.5	1				IIIG
	1336	1843	WEIS				1337.4	1337.7	1				IIIG
			BLEN	1340.5	1340.8	1							IIIG
			BLEN	1346.7	1346.9	1							IIIG
			BLEN	1355.2	1411.6	3	1355.2	1411.6	3				IIIGG
			WEIS				1355.5	1355.8	2				IIIG
			WEIS				1357.4	1358.5	2				IIIG
			BLEN	1403.1	1405.4	2	1403.1	1405.4	2				II DCIM
			WEIS				1404.2	1405.3	1				IIIG,DC
			BLEN	1416	1805 D	1	1416	1805 D	1				I,DC
			BLEN	1433.2	1433.4	1							DCIM
			BLEN	1512.9	1513.6	1							IIIG
			BLEN	1537.2	1537.5	1							DCIM
			WEIS				1604.7	1605.4	2				IIIG
			BLEN	1614.0	1624.4	3	1614.0	1624.4	3				IIIGG
			WEIS				1614.6	1617.9	3				IIIGG
			WEIS				1712.0	1713.2	3				IIIG
			BLEN	1712.4	1713.0	2	1712.4	1713.0	2				IIIG
			WEIS				1743.3	1743.5	1				IIIB
			WEIS				1747.3	1748.3	3				IIIG
			WEIS				1750.3	1755.2	3				IIIGG,RS
			BLEN	1751.1	1754.9	2	1751.1	1754.4	2				IIIGG
			BLEN	1752.9	1758.7	2							IV
			WEIS				1756.7	1758.9	2				IIIG,DC
			WEIS				1836.0	1836.2	1				IIIG
08	0412	1805	BLEN	0412 E	1805 D	1	0412 E	1805 D	1				I
			BLEN	0412.7	0419.6	1							IIIG
	0409	1740	WEIS				0414.8	0415.0	3				IIIG
			WEIS				0422.4	0422.9	2				IIIG
			WEIS				0658.6	0658.9	2				IIIG
			BLEN	0700.4	0700.6	1							IIIG
			WEIS				0738.4	0738.6	1				IIIB
			BLEN	0809.5	0809.7	1							IIIG
			BLEN	1010.1	1010.4	1							DCIM
			BLEN	1056.3	1056.4	2							IIIG
			BLEN	1123.8	1145.4	1							IIIGG
			BLEN				1207.8	1208.3	2				IIIG,U
			WEIS				1207.8	1208.2	2				IIIG
			BLEN	1227.3	1227.4	1							IIIB
			BLEN	1306.8	1306.9	1							IIIG
			WEIS				1339.7	1339.9	1				IIIG
			WEIS				1348.1	1348.3	1				IIIB
			WEIS				1410.1	1410.3	1				IIIG
			WEIS				1418.6	1419.4	2				IIIG
			WEIS				1534.8	1538.4	2				IIIG,U
			BLEN	1616.9	1621.9	2							IIIG,RS
			WEIS				1652.8	1653.6	3				IIIG,U
			BLEN	1653.0	1653.4	1	1653.0	1653.4	2				IIIG,U
			WEIS				1702.6	1702.9	2				IIIG
			WEIS				1705.2	1705.9	2				IIIG
			WEIS				1708.2	1708.4	2				IIIG
			WEIS				1714.7	1715.3	3				IIIG
			BLEN				1719.4	1719.9	2				IIIG
			WEIS				1719.5	1720.3	3				IIIG
			WEIS				1721.9	1722.1	1				IIIB
			WEIS				1723.8	1725.1	1				IIIG
			WEIS				1731.3	1731.4	1				IIIB
			WEIS				1736.4	1738.9	2				IIIG
	1742	1842	WEIS				1748.2	1748.3	2				IIIB

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
08			WEIS				1752.8	1753.0	2				IIIB
			WEIS				1803.7	1804.1	2				IIIG
			WEIS				1806.2	1808.3	3				IIIG
			WEIS				1813.7	1814.4	2				IIIG
			WEIS				1816.9	1818.2	3				IIIG
			WEIS				1820.2	1822.0	2				IIIGG
			WEIS				1838.9	1839.9	3				IIIG
09	0415	1805	BLEN				0415 E	1805 D	2				I,DC
	0411	1218	WEIS				0452	1830	2				IIIN
			BLEN				0452.8	0453.2	2				IIIG
			BLEN	0606.0	0613.6	1	0606.0	0613.6	2				IIIG
			BLEN	0650.2	0658.7	1	0650.2	0658.7	2				IIIGG,U
			BLEN				0757.2	0759.2	3				V
			WEIS				0757.6	0759.8	3				IIIG
			BLEN				0830.8	0830.2	2				IIIB
			BLEN	0859.7	0859.2	2							IIIB
			BLEN	1010.5	1010.7	2	1010.5	1010.7	2				IIIG,U
			BLEN	1059.2	1059.7	1	1059.2	1059.7	1				IIIG
			BLEN				1219.5	1219.6	2				IIIB
	1252	1842	WEIS										
			BLEN	1337.2	1339.8	2							IIIG,RS
			BLEN	1514.2	1518.3	3	1515.8	1516.7	3				IIIGG,RS,D
			BLEN	1744.5	1744.8	1	1744.5	1746.3	2				IIIG
10	0415	0806	BLEN				0415 E	0806 D	2				I,DC
			BLEN				0423.2	0423.3	2				IIIB
	0412	0803	WEIS				0438	1713	1				IIIN
			BLEN	0501.2	0507.2	2	0501.2	0502.7	2				IIIGG
			BLEN	0526.6	0526.7	1	0526.6	0526.7	1				IIIB
			BLEN	0616.1	0619.1	3							IIIGG,U,RS
			BLEN				0621.5	0623.8	2				IIIGG
			BLEN	0710.8	0734.8	1	0710.8	0734.8	1				IIIGG
			BLEN				0803.1	0803.4	1				IIIG
	1318	1805	BLEN				1318 E	1805 D	1				I
			BLEN	1406.2	1406.5	1	1406.2	1406.5	1				IIIG
			BLEN	1426.0	1426.8	3	1426.0	1426.8	3				IIIG,U
	0813	1115	WEIS				1426.2	1427.4	3				IIIG
			BLEN	1442.9	1444.2	1	1442.9	1444.2	1				IIIGG
			BLEN	1530.5	1534.1	1	1530.5	1534.1	1				IIIGG
	1340	1841	WEIS				1736.8	1739.7	3				IIIGG
			BLEN				1737.4	1739.5	2				IIIG
			BLEN	1802.2	1802.2	2	1802.2	1802.2	2				IIIB
11	0415	1803	BLEN				0415 E	1803 D	1				I,DC
			BLEN				0508.8	0508.9	2				IIIB
	0412	1343	WEIS				0509	0535	2				IIIN
			BLEN	0529.7	0532.9	3	0529.7	0532.9	3				IIIGG,V
			WEIS				0531.6	0533.3	3				IIIGG
			BLEN	0619.9	0630.5	3	0619.9	0630.5	3				IIIG
			BLEN	0810.3	0824.8	2	0810.3	0824.8	2				IIIGG,U
			WEIS				0815	1216	1				IN
			BLEN				0947.2	0947.4	1				IIIG
			BLEN	1005.4	1008.6	2							DCIM
			WEIS				1005.5	1005.7	1				IIIG
			WEIS				1008.8	1009.0	2				IIIG
			WEIS				1042.2	1044.4	1				IIIG
			WEIS				1049.7	1049.9	2				IIIG
			WEIS				1052.7	1055.3	3				IIIGG
			BLEN				1053.0	1053.9	3				IIIG,V
			WEIS				1057.5	1101.5	2				IIIGG
			WEIS				1105.9	1106.4	2				IIIG
			WEIS				1108.5	1110.6	2				IIIGG
			WEIS				1130.6	1130.8	1				IIIG
			WEIS				1134.1	1134.3	1				IIIB
			WEIS				1147.9	1154.4	1				IIIGG
			WEIS				1247.7	1253.2	1				IIIGG
			BLEN				1250.8	1301.4	2				IIIGG
			WEIS				1255.7	1257.4	3				IIIGG
			WEIS				1258.6	1258.8	1				IIIB

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
11			WEIS				1259.8	1301.6	1				IIIG
			BLEN	1335.2	1338.6	2							DCIM
			BLEN	1443.5	1443.7	1							IIIG
			BLEN	1513.8	1518.2	3	1513.8	1518.2	3				IIIG
	1646	1834	WEIS										
			BLEN				1655.0	1655.2	1				IIIG
			BLEN				1759.5	1802.4	1				IIIG
12	0420	1803	BLEN				0436.6	0438.5	2				IIIG,U
			BLEN	0438.1	0438.2	1							DCIM
	0425	1832	WEIS				0509	1827	2				IIIN
			BLEN	0509.5	0511.0	1	0509.5	0511.0	1				IIIGG
			BLEN	0712.5	0712.6	1							IIIG
			BLEN	1200	1803 D	1	1200	1803 D	1				I,DC
			BLEN				1355.2	1355.4	2				III,B,U
			BLEN	1405.1	1405.8	1							IIIG
13	0426	0833	WEIS				0635	1829	1				IIIN
			WEIS				0648.2	0648.4	2				IIIG
	0837	1832	WEIS										
14	0427	1419	WEIS				0434	1727	2				IIIN
	1422	1830	WEIS				0622	1806	2				IS,DC
15	0428	1828	WEIS				0434	1815	1				IN
			WEIS				0501	1821	1				IIIN
			WEIS				0835.9	1836.3	2				U
	1535	1803	BLEN				1535 E	1803 D	2				I,DC
			BLEN	1554.1	1555.3	1	1554.1	1553.1	1				IIIG
			BLEN	1705.2	1714.3	2	1705.2	1714.3	2				IIIGG
			WEIS				1713.1	1713.3	2				IIIG
			BLEN	1751.0	1751.1	1							IIIG
16			BLEN				0437.7	0437.7	1				IIIB
	0429	0613	WEIS				0438	1816	1				IIIN
			BLEN	0506.2	0543.3	1	0506.2	0543.3	1				IIIG
	0615	1827	WEIS				0533	1653	2				IN,DC
			BLEN	0624.5	0624.9	1	0624.5	0624.9	1				IIIG
			BLEN	0634.2	0634.3	2							DCIM
			BLEN	0654.5	0654.5	1							IIIB
			BLEN				0902.3	0902.3	1				IIIB
			BLEN	0930.2	0930.2	1	0930.1	0930.2	1				IIIB
			BLEN	1023.5	1023.9	1	1023.5	1023.9	1				IIIG
	0437	1743	BLEN	1200	1743 D	1	0437 E	1743 D	1				I
			BLEN	1327.3	1327.3	1	1327.3	1327.3	1				IIIB
			BLEN	1335.2	1336.4	1							DCIM
			WEIS				1506.8	1519.8	3				IIIGG
			BLEN	1509.1	1516.1	2	1509.1	1515.7	3				IIIGG,DCIM
17	0431	1221	WEIS				0438	1825	2				IIIN
	0440	0522	BLEN	0440 E	0522 D	2	0440 E	0522 D	2				I,DC
	1232	1828	WEIS				0440	1827	2				IS,DC
			BLEN				0444.3	0522 D	1				IIIGG
			WEIS				0550	0610	2				CONT
			WEIS				0615	1827	2				CONT
			WEIS				1017.1	1017.4	2				IIIG
			WEIS				1020.5	1020.7	2				IIIB
			WEIS				1022.2	1022.7	2				IIIG
			WEIS				1433.3	1433.5	2				IIIG
			WEIS				1646.1	1648.7	2				IIIG
			WEIS				1732.9	1733.2	2				IIIG
18			WEIS				0432	1823	2				IS,CONT
			WEIS				0433.2	0434.3	2				IIIG
	0430	1826	WEIS				0443	1758	2				IIIN
			WEIS				0454.7	0457.9	3				IIIGG
	1833	1836	WEIS										
19			WEIS				0925	1832	2				IS,DC
	0921	1833	WEIS				0936	1825	2				IIIN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
19			WEIS				1025.5	1025.6	3				IIIB
			WEIS				1138.4	1141.1	3				IIIGG
20			WEIS				0427	1820	2				IN,DC
	1033	1832	WEIS				0428	1828	2				IIIN
	0426	1021	WEIS				0428.2	0428.4	3				IIIB
			WEIS				0453.9	0455.9	3				IIIGG
			WEIS				0605.0	0605.4	3				IIIG
			WEIS				0756.2	0756.5	2				IIIG
			WEIS				1059.2	1059.7	3				IIIG
			WEIS				1149.6	1151.4	3				IIIGG
			WEIS				1217.5	1225.5	3				IIIGG
21	0428	1643	WEIS				0428	1829	2				IIIN
	1649	1831	WEIS				0444	1737	1				IN
			WEIS				0653.1	0653.9	2				IIIG
			WEIS				0656.4	0657.3	3				IIIG
			WEIS				0934.5	0936.6	3				IIIG
			WEIS				1028.0	1028.8	3				IIIG
			WEIS				1043.4	1044.6	2				IIIG
			WEIS				1210.6	1212.8	3				IIIG
			WEIS				1248.3	1251.7	3				IIIG/V
			WEIS				1340.8	1342.3	3				IIIGG
			WEIS				1356.1	1358.1	2				IIIGG
			WEIS				1409.9	1416.8	3				IIIGGRS
			WEIS				1729.8	1732.6	2				IIIG
22	0429	1828	WEIS				0429	1809	2				IN
			WEIS				0430	1819	2				IIIN
23			WEIS				0447	1748	1				IN
	0430	1829	WEIS				0719	1547	1				IIIN
24	0429	1535	WEIS				0423	0524	1				I
			WEIS				0645.8	0645.9	1				IIIG
			WEIS	0648.7	0649.0	2							IIIG
			WEIS				1336.2	1337.8	1				IIIG
	1547	1828	WEIS				1556.8	1557.1	2				IIIG
25	0431	1826	WEIS				0505.0	0505.4	1				IIIG
			WEIS				0518.3	0518.7	2				IIIG
			WEIS				0533.1	0534.4	2				IIIG
			WEIS				0834.1	0834.3	1				IIIB
			WEIS				0849.4	0846.7	2				IIIGG
			WEIS				1246.3	1246.7	2				IIIG
26	0430	0732	WEIS	0547.1	0547.3	2	0547.1	0547.3	2				IIIG
	0735	1824	WEIS				1540.3	1540.8	1				IIIG
			WEIS				1604.8	1605.7	1				IIIG
			WEIS				1609.0	1610.0	1				IIIG
			WEIS				1612.3	1613.6	1				IIIG
			WEIS				1632.5	1637.3	1				IIIGG
			WEIS				1658.6	1658.9	2				IIIG
			WEIS				1709.4	1709.6	2				IIIB
27	0945	1825	WEIS				1012.9	1013.1	1				IIIB
			WEIS				1026.0	1026.2	2				IIIG
			WEIS				1126.4	1127.1	1				IIIG
			WEIS				1152	1711	1				IN
			WEIS				1242.5	1248.4	3				IIIGG
			WEIS				1300.2	1304.2	1				II HARM
			WEIS				1626.3	1627.4	2				IIIGG
			WEIS				1756.1	1756.8	1				IIIG
			WEIS				1813.8	1814.1	1				IIIG
28	0433	0530	WEIS										
	0629	1824	WEIS				0805.4	0806.2	1				IIIG
			WEIS				0821.2	0824.0	1				IIIG
			WEIS				1138.4	1140.2	1				IIIG
			WEIS				1224.3	1225.8	1				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JULY 1980

DAY	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
28			WEIS				1456.8	1457.0	2				IIIG
			WEIS				1554.9	1555.4	2				IIIG
			WEIS				1713.1	1713.2	1				IIIB
			WEIS				1754.4	1754.6	1				IIIB
29	0425	1233	WEIS				0441	1116	1				IIIN
30	0510	1822	WEIS				1033.2	1033.4	2				IIIG
			WEIS				1038.0	1039.5	1				IIIGG
			WEIS				1130.9	1031.9	2				IIIG
			WEIS				1151.6	1153.3	2				IIIG
			WEIS				1302.4	1305.2	1				IIIG
			WEIS				1311.5	1316.3	1				II
			WEIS				1321.9	1322.2	1				IIIB
			WEIS				1520.4	1522.9	1				IIIG
	1707	1855	BLEN										
31	0415	1855	BLEN	0459.2	0459.6	2							IIIG,U
	0603	1820	WEIS				1336.3	1337.3	1				IIIG
			WEIS				1410.4	1410.5	1				IIIB
			WEIS				1418.4	1418.6	2				IIIB

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

COSMIC RAY INDICES
(Neutron Monitors)

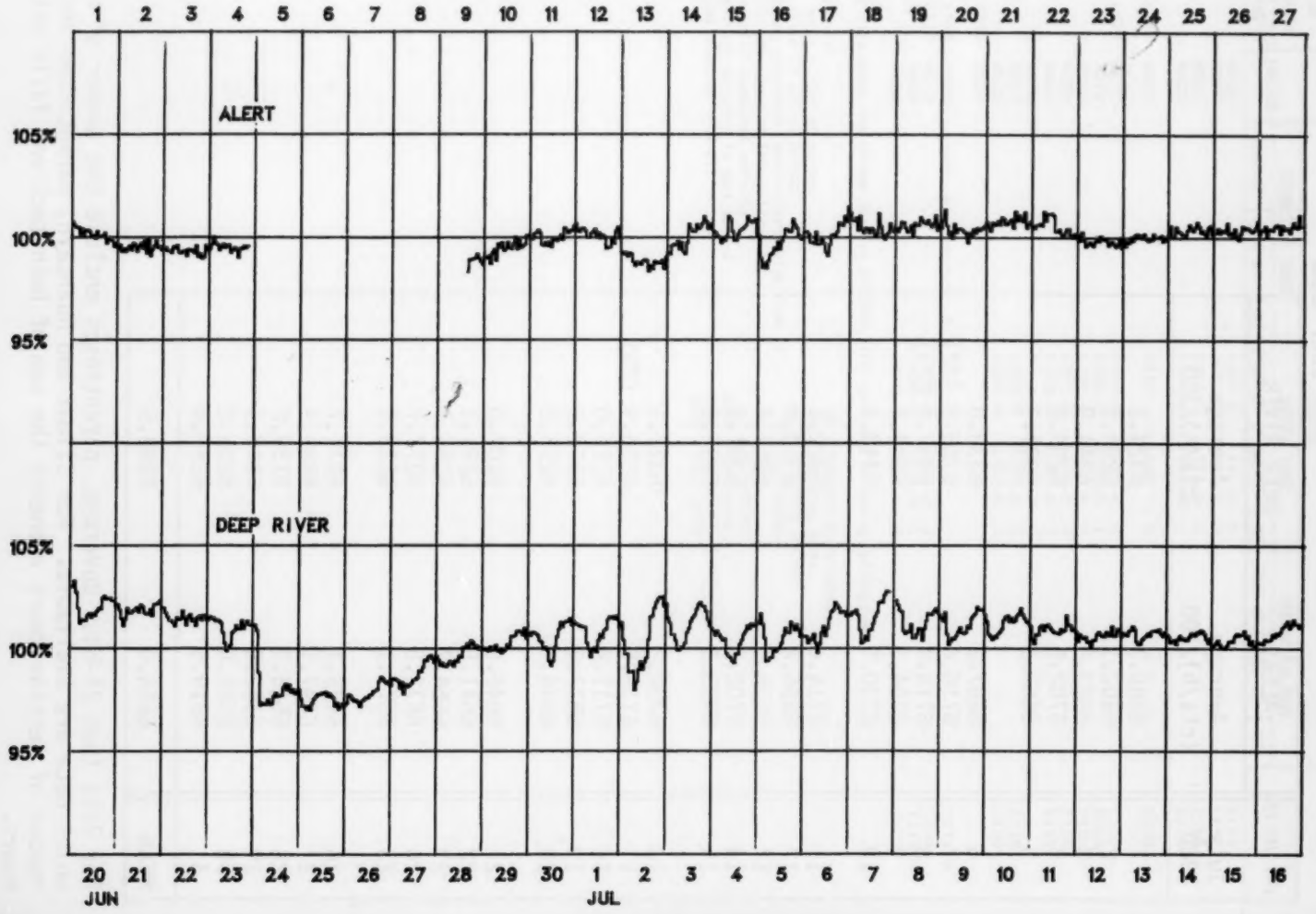
JULY 1980

July 1980	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	6686.3	6324.2
2	6602.1	6294.5
3	6683.9	6344.8
4	6702.5	6298.8
5	6660.1	6305.3
6	6687.2	6338.8
7	6710.6	6368.8 (22)
8	6718.4	6352.0 (23)
9	6704.3	6344.4
10	6730.5	6348.4
11	6714.6	6329.3
12	6666.8	6310.8
13	6678.0	6316.4
14	6702.5	6307.3
15	6703.3	6295.0
16	6712.3	6322.1
17	6728.5	6335.9 (23)
18	6711.8	6316.0
19	6577.2	6170.6
20	6644.9	6215.2
21	6646.6	6207.0
22	6641.5	6221.1
23	6664.7	6257.7
24	6672.8	6277.7
25	6671.1	6228.0
26	6473.1	6071.1
27	6497.1	6089.9
28	6545.3	6139.0
29	6562.0	6148.5
30	6586.0	6205.2
31	6619.5	6238.4
MEAN	6655.0	6268.5

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)

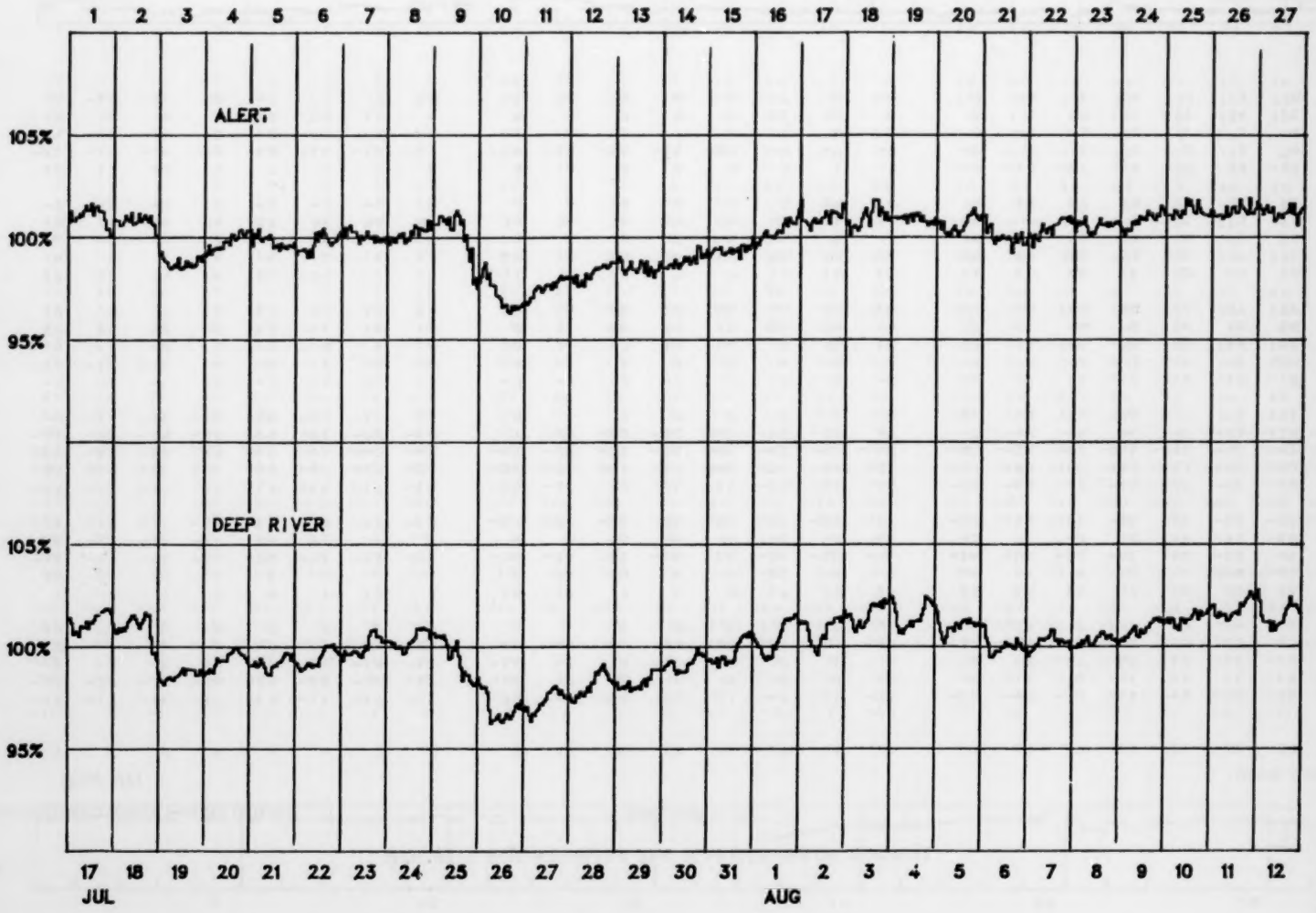
Bartels Rotation 2008 (June 1980–July 1980)



COSMIC RAY INDICES

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2009 (July 1980–August 1980)



185
Late
Jul 80

HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

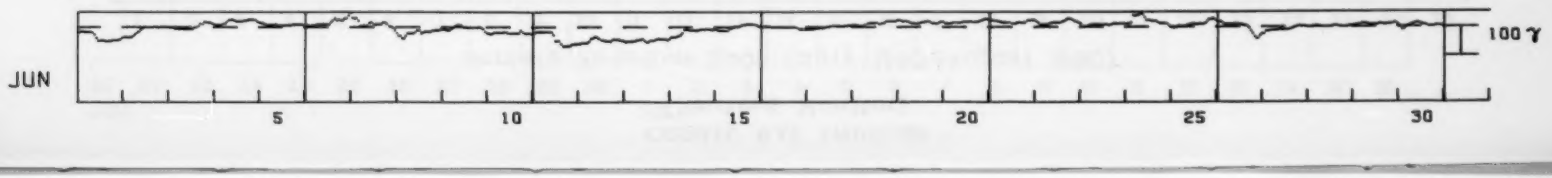
NASA/GODDARD SPACE FLIGHT CENTER

JUNE 1980

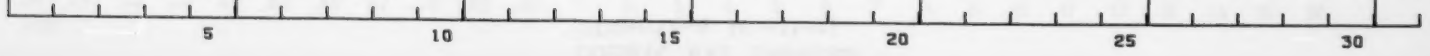
(Time-UT)

(Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-15	-13	-14	-17	-18	-16	-17	-21	-30	-40	-49	-46	-43	-48	-51	-50	-48	-46	-43	-44	-45	-42	-40	-35
2	-33	-32	-37	-34	-33	-28	-22	-17	-13	-7	-2	1	0	0	0	1	2	1	0	1	1	1	2	-2
3	-5	-4	-7	-9	-7	-10	-10	-11	-11	-7	-9	-11	-9	0	1	4	12	9	17	15	12	11	8	5
4	3	7	4	8	10	12	16	24	25	25	21	16	18	20	20	22	22	24	25	26	25	23	15	11
5	10	9	5	3	3	3	5	6	6	1	1	2	1	3	2	4	6	8	7	7	5	6	6	2
6	4	2	0	3	4	7	10	9	10	10	7	6	9	17	23	30	21	26	16	22	29	30	38	47
7	26	24	30	18	-1	-3	4	-1	6	14	15	6	9	11	6	8	16	14	8	-3	-5	-8	-14	-25
8	-32	-33	-42	-39	-29	-22	-21	-22	-20	-16	-11	-16	-26	-19	-15	-14	-16	-16	-12	-12	-10	-13	-9	-7
9	-8	-10	-13	-14	-6	-1	3	7	9	3	-5	-6	-4	-5	-5	-5	-2	-1	-2	0	-6	-11	-19	-25
10	-25	-28	-22	-19	-18	-20	-21	-19	-17	-17	-24	-26	-23	-23	-20	-23	-22	-12	-21	-26	-24	-21	-25	-30
11	-23	-17	-15	-17	-17	-19	-17	-16	-20	-22	-32	-51	-51	-50	-61	-68	-68	-64	-65	-63	-57	-57	-60	-55
12	-59	-52	-56	-56	-52	-47	-38	-37	-32	-36	-41	-47	-48	-51	-49	-51	-52	-43	-40	-45	-43	-46	-50	-48
13	-55	-52	-50	-48	-48	-49	-43	-45	-41	-39	-51	-56	-51	-45	-48	-45	-40	-38	-41	-41	-40	-40	-47	-39
14	-34	-33	-35	-32	-29	-27	-20	-10	-7	-10	-10	-12	-12	-13	-13	-9	-7	-8	-8	-6	-7	-12	-10	-7
15	-9	-14	-15	-16	-15	-13	-13	-6	-2	1	2	3	3	7	8	8	11	10	10	10	7	5	-1	-2
16	-3	-2	-1	-1	-2	-4	-4	-4	-3	-3	-2	-1	-3	-3	-5	-5	-5	-5	-8	-12	-12	-12	-13	-10
17	-10	-12	-13	-8	-6	-4	-4	-4	-4	-1	1	2	3	4	2	3	3	3	2	3	4	5	6	7
18	8	7	3	2	3	4	9	12	12	14	13	14	14	9	11	12	13	19	19	20	20	19	19	23
19	23	20	17	20	18	16	12	10	8	11	12	14	15	16	18	19	17	11	9	8	10	15	18	18
20	10	9	7	12	14	14	14	13	14	16	18	18	16	18	18	16	17	16	19	22	24	27	27	25
21	22	22	19	16	16	14	13	12	11	12	13	7	7	10	14	16	11	11	16	21	23	23	22	23
22	16	9	4	4	4	5	8	12	13	15	15	14	13	15	18	21	26	29	26	23	16	14	11	7
23	-1	-5	-3	2	6	9	7	5	6	8	8	7	6	4	2	7	10	12	10	10	11	12	10	10
24	9	8	14	36	37	36	39	44	39	28	21	19	16	15	14	14	11	8	9	9	11	5	0	-5
25	-9	-6	-3	4	-2	-2	-4	4	6	8	10	11	8	9	11	9	9	12	17	25	24	28	22	15
26	13	17	10	4	7	6	8	6	8	10	6	4	5	0	1	-3	-9	-18	-27	-37	-43	-38	-29	-23
27	-22	-15	-14	-13	-12	-12	-11	-11	-10	-10	-11	-11	-10	-9	-7	-5	-2	0	3	3	2	2	0	-4
28	-4	-1	2	3	3	2	-2	-1	-1	0	1	1	1	4	4	2	0	-2	-3	-2	1	3	4	4
29	5	6	9	9	12	12	11	9	6	9	7	5	7	11	10	8	6	9	10	11	11	14	11	4
30	-6	-14	-11	-2	1	2	7	10	11	14	13	8	3	2	0	-4	0	-3	1	4	3	3	0	-7



HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)



HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

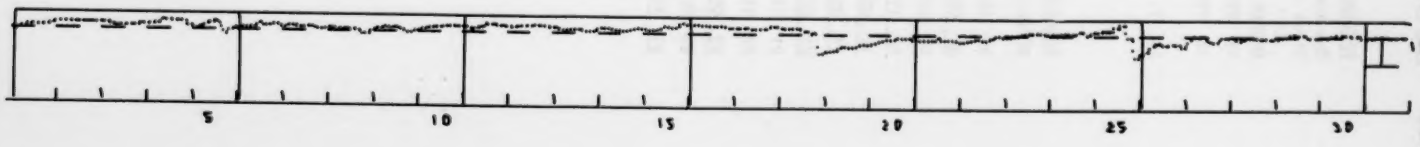
NASA/GODDARD SPACE FLIGHT CENTER

JULY 1980

(Time-UT)

(Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-9	-8	-6	-3	1	6	8	9	10	11	10	12	12	10	6	8	10	10	11	11	11	15	16	20
2	21	23	22	22	25	28	28	22	21	20	20	19	17	18	19	18	17	18	18	16	14	16	19	21
3	20	16	17	19	16	11	9	7	5	5	5	5	6	7	6	8	9	10	9	11	17	16	15	12
4	11	14	16	16	18	19	17	22	30	32	28	29	30	25	22	23	26	26	24	21	19	11	7	8
5	4	-1	-4	0	7	10	10	13	18	23	21	21	28	26	19	14	2	-12	-20	-13	-3	-1	2	4
6	7	9	8	8	9	7	7	11	10	7	9	16	23	18	11	10	13	15	15	20	19	18	15	10
7	6	5	9	16	14	16	14	18	8	5	8	11	12	13	13	13	9	4	3	1	-1	2	5	7
8	10	11	9	4	4	0	0	2	2	5	1	-2	1	5	3	-2	-4	-7	-14	-15	-13	-11	-4	0
9	0	6	10	10	10	11	13	15	11	7	7	12	14	10	6	2	0	-4	-9	-7	-7	-4	1	4
10	3	5	8	10	11	11	13	13	14	15	14	16	16	15	17	18	16	18	19	20	20	18	19	16
11	16	18	16	13	9	5	9	12	13	17	18	17	20	30	21	23	24	23	21	17	15	17	19	13
12	16	15	12	13	16	18	20	21	21	20	22	22	19	22	23	25	21	17	17	17	16	15	12	14
13	15	14	13	9	7	4	2	5	9	10	11	12	7	11	11	9	2	-1	0	0	2	4	6	8
14	17	17	17	13	12	18	11	9	6	4	6	5	4	1	1	7	8	10	12	13	11	15	16	11
15	9	9	9	4	5	7	12	12	12	13	15	23	24	21	16	13	14	16	20	24	32	36	29	25
16	24	27	29	28	27	25	24	21	21	24	22	23	19	19	19	19	20	20	21	19	17	14	13	14
17	16	19	16	15	16	17	15	20	15	11	13	15	13	12	12	14	16	16	16	22	27	21	21	20
18	20	15	15	13	13	13	14	17	15	16	16	16	11	5	5	5	4	-1	-5	6	-3	-46	-71	-66
19	-67	-59	-60	-57	-57	-54	-61	-55	-49	-43	-40	-40	-44	-47	-49	-48	-42	-42	-41	-37	-34	-33	-34	-37
20	-39	-35	-31	-29	-28	-28	-22	-21	-20	-16	-15	-17	-19	-15	-15	-11	-11	-13	-16	-14	-12	-11	-12	-15
21	-23	-16	-14	-24	-23	-23	-21	-22	-22	-22	-22	-19	-17	-9	-14	-22	-23	-21	-19	-20	-20	-20	-22	-25
22	-29	-29	-26	-23	-21	-19	-19	-18	-16	-13	-12	-16	-20	-23	-22	-18	-14	-11	-11	-6	-3	-1	-5	-11
23	-7	-6	-7	-7	-6	-3	-2	-2	0	2	5	5	6	6	9	7	6	7	9	8	6	4	0	-1
24	2	6	6	3	2	4	4	7	9	8	6	4	3	0	3	8	13	14	13	9	0	-4	3	9
25	13	12	10	9	15	18	18	16	17	17	17	30	24	23	38	36	35	8	-11	-8	-17	-51	-79	-77
26	-64	-60	-62	-57	-52	-41	-39	-32	-25	-20	-30	-22	-31	-36	-34	-33	-29	-27	-21	-31	-32	-31	-34	-40
27	-42	-31	-20	-11	-2	3	-6	-7	-7	2	-1	-4	-14	-18	-22	-25	-23	-20	-17	-10	-4	-3	-7	-6
28	-4	-1	-5	-14	-15	-19	-16	-9	-10	-8	-2	-5	-6	-9	-9	-11	-10	-12	-11	-11	-12	-13	-12	-11
29	-10	-8	-7	-2	-3	-2	-1	0	4	7	8	9	6	0	6	7	6	1	-7	-9	-7	-7	-4	-4
30	-6	-4	-3	-3	-3	-3	2	4	5	6	8	8	6	6	5	4	3	-1	-3	0	5	5	-1	-8
31	-10	-7	-4	-4	-3	-4	-2	1	3	5	3	2	-3	-7	-3	-6	-2	-2	-1	0	-3	-6	-7	-5



187
Late
Jul 80

188
Late
Jul 80

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

JULY 1980

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS

The meaning of the station symbols is given in the IAGA-Bulletin, 32h, page 106-116.
Times of ssc are mean values.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc)

17 1936 A: DOU FUR ACS; B: WNG TOL; C: WIT NGK HRB (b: A: MPO)

18 1926 A: VIC FUR COI HAZ MPO; B: WNG HRB MMB TOL KAK PMG DUM;
C: KNY CZT KGL

25 1111 A: NUR ESK WNG DOU VIC FUR COI TOL FRD MPO ACS TWA KGL;
B: SOD WIT HAD HRB MMB EBR KAK HAZ PMG CZT DUM;
C: NGK KNY

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observation are underlined.

01 1627 - 1700 SOD WIT HAD TOL ACS (ssc: A: VIC -si: A: DOU)

06 0420 - 0440 MMB HAZ

06 0442 - 0530 MMB HAZ

12 1542 - 1555 EBR

14 0823 - 0836 WNG FUR? HRB TOL MPO?

17 0555 - 0707 KAK

21 0254 - 0320 MMB KAK HAZ KNY

21 1613 - 1641 TOL (bp: B: MPO)

22 1512 - 1540 SOD

23 0050 - 0322 MMB KAK

23 0938 - 0950 SOD

23 1701 - 1716 WNG

Astronomy
QB1.U67
No434, pt2

P-A STACKS

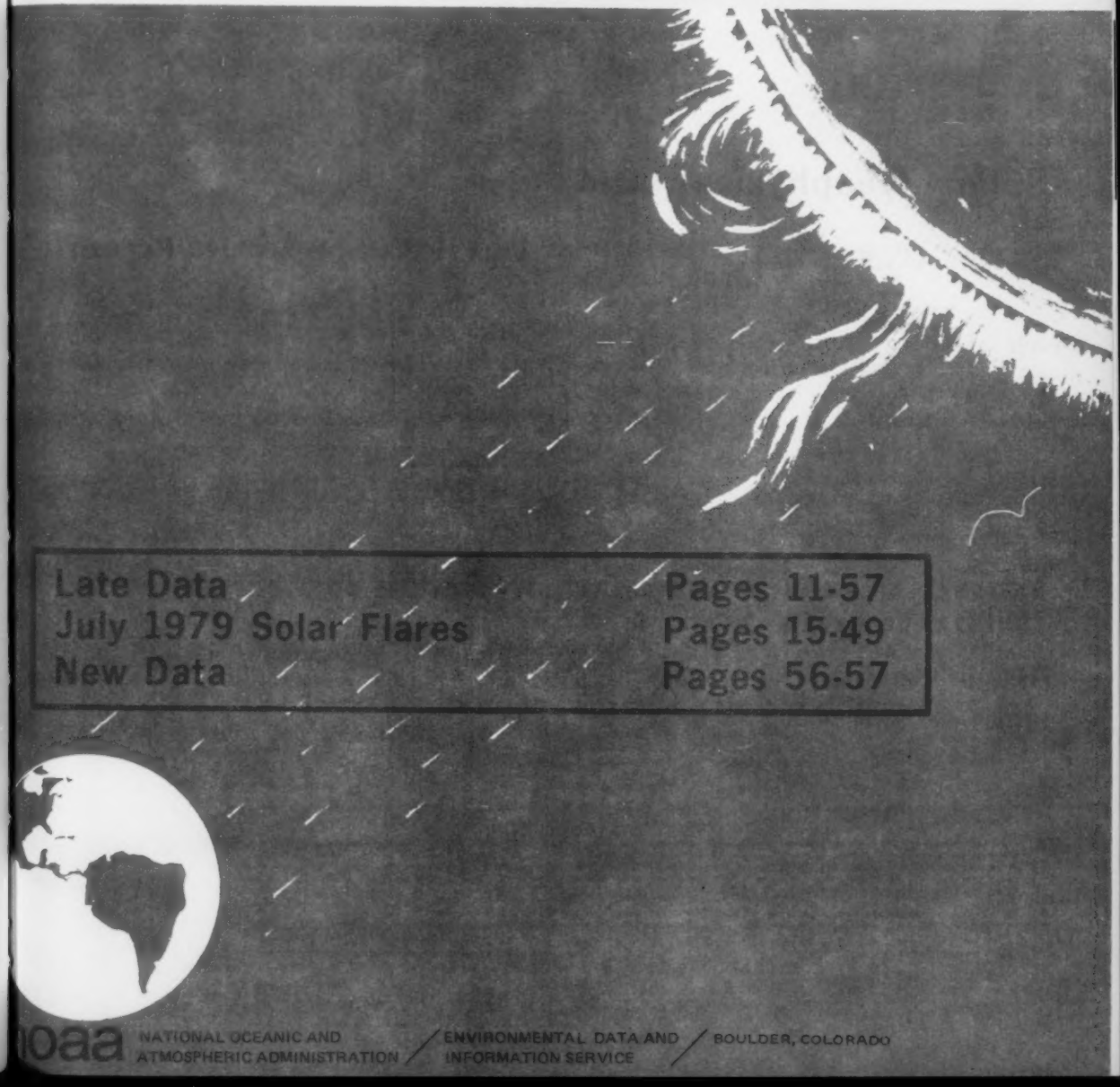
CTOBER 1980 NUMBER 434 -- Part II

JAN 2 1981

Solar-Geophysical Data comprehensive reports

ata for April 1980 & Miscellanea

planation of Data Reports Issued as Number 426 (Supplement) February 1980



Late Data	Pages 11-57
July 1979 Solar Flares	Pages 15-49
New Data	Pages 56-57

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA AND INFORMATION SERVICE / BOULDER, COLORADO

U.S. DEPARTMENT OF COMMERCE
Philip M. Klutznick, Secretary
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Richard A. Frank, Administrator
ENVIRONMENTAL DATA AND INFORMATION SERVICE
Thomas D. Potter, Director

Solar - Geophysical Data

NO. 434 OCTOBER 1980

Part II (Comprehensive Reports)

DATA FOR
APRIL 1980

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

For obtaining bulletins on a data exchange basis, send request to: World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Colorado 80303.

For sale through the National Geophysical and Solar-Terrestrial Data Center, NOAA, Boulder, CO 80303. Subscription Price: $40.00 annually for both part I (Prompt Reports) and part II (Comprehensive Reports) or $21.00 annually for either part. Annual supplement containing explanation is included. For foreign mailing add $32.00 for both parts or $16.00 for either part. Single issue price is $1.75 for either part and $1.50 for the extra issue. Make checks and money orders payable to: Department of Commerce, NOAA/NGSDC. Note: $2.00 handling charge per order.

To standardize referencing these reports in the open literature, the following format is recommended: Solar-Geophysical Data, 426 Part I (or Part II), pages, February 1980, U.S. Department of Commerce (Boulder, Colorado, U.S.A. 80303).

SOLAR-GEOPHYSICAL DATA

No. 434

Issued in two parts

Helen E. Coffey, Editor

J. Virginia Lincoln, Chief
Solar-Terrestrial Physics Division

CONTENTS

Part I (Prompt Reports)

PAGE

Index for 1979-1980 2

Data for September 1980 3-40

Data for August 1980 41-155

Late Data 157-188
Daily Solar Activity Centers Errata: Regions June 1980
Solar Radio Emission Spectral July 1980
Cosmic Rays Alert/ Deep River July 1980
Geomagnetic Indices
Hourly Equatorial Dst Values June - July 1980
Sudden Commencements July 1980

Part II (Comprehensive Reports)

Index for 1979-1980 2

Data for April 1980 3-10
Note on Delay of Solar Flare Data 4

Miscellaneous Data 11-57
Synoptic Solar Maps Nov 30, 1979 - Jan 24, 1980
Active Regions Dec 27, 1979 - Jan 24, 1980
Solar Flares July 1979
Energetic Solar Particles Dec 1979
IMP 8 Electrons, Protons and Alpha Particles
Regional Flare Index June 1979
Mass Ejections from the Sun March 1980

DETAILED COVERAGE FOR 1979-80 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1979 Sep	Oct	Nov	Dec	1980 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
A.	SOLAR AND INTERPLANETARY PHENOMENA													
A.1	Sunspot Drawings	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.2a	Zurich Provisional Relative Sunspot Numbers Rz	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11	434A
A.2b	Zurich Final Sunspot Numbers Rz	428A 9	429A 9	428A 9	428A 9									
A.2c	American Relative Sunspot Numbers RA	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11	434A
A.3a	Mt. Wilson Magnetograms	423A 50	424A 50	425A 48	426A 50	427A 50	427A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	423A110	424A112	425A108	428A150	427A112	428A102	429A104	430A112	431A110	432A110	433A110	434A108	
A.3c	Kitt Peak Magnetograms	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.3d	Mean Solar Magnetic Field (Stanford)	422A 42	423A 40	424A 40	425A 36	426A 38	427A 38	428A 34	429A 35	430A 44	431A 41	432A 42	433A 40	434A
A.3e	Stanford Magnetograms	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.4	H-alpha Filtergrams	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.5	Calcium Plage Drawings - Mt. Wilson	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.5a	Calcium Plage (Mt. Wilson) and Sunspot Regions	423A110	424A112	425A108	428A150	427A112	428A102	429A104	430A112	431A110	432A110	433A110	434A108	
A.5b	Mt. Wilson Daily Calcium Plage Indices	423A124	424A125	425A121	426A112	427A122	428A112	429A115	430A123	431A121	432A128	433A127	434A125	
A.6	H-alpha Synoptic Charts	423A 44	424A 44	425A 40	426A 42	427A 42	428A 38	429A 39	430A 48	431A 44	432A 46	433A 44		
A.6b	Synoptic Chart and Active Regions (Paris)	429B 38	430B 30	432B 42	432B 43	434B 14								
A.6c	Stanford Solar Magnetic Field Synoptic Charts	423A 46	424A 46	425A 42	426A 44	427A 44	428A 40	429A 40	430A 49	431A 45	432A 47	433A 45	434A 43	
A.6d	Kitt Peak Solar Magnetic Field Synoptic Charts	423A 48	424A 48	425A 44	426A 46	427A 46	428A 42	429A 41	430A 50		432A 48	433A 46	434A 44	
A.6e	Mass Ejections from the Sun							434B 56						
A.7f	Helium D3 Chromosphere (Big Bear)	422A 38	423A 41	425B 28	425A 37	426A 39	427A 39	428A 35	429A 36	430A 41	432A167	432A 37	433A 35	
A.7g	Helium Synoptic Maps (KPNO)	423B 75	425A 46	425A 47	426A 48	427A 48		431A162	430A 51	431A 46	432A 49	433A 47	434A 45	
A.7h	Coronal Line Emission (Sac Peak)	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48	432A 50	433A 48	434A 46	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11	434A
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11	434A
A.8g	Daily Values of Adjusted Solar Flux (AFGL)	422A 11	423A 11	424A 11	425A 11	426A 10	427A 9	428A 10	429A 9	430A 11	431A 11	432A 11	433A 11	434A
A.9cb	8.6 mm Radio Maps of the Sun (NOSC - La Posta)	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48		433A 48	434A 46	
A.9d	2 cm Radio Maps of the Sun (NOSC - La Posta)	423A 50	424A 50	425A 48	426A 50	427A 50	428A 44	429A 42	430A 52	431A 48		433A 48	434A 46	
A.10a	169 MHz - Interferometric Observations (Nancay)	422A 25	423A 27	424A 25	425A148	426A 23	427A 23	428A 20	429A 22	430A 26	432A166	432A 24	433A 22	434A
A.10c	21 cm East-West Solar Scans (Fleurs)	422A 28	423A 30	424A 28	425A 27	426A 26	427A 26	429A150	429A 25	430A 29	431A 28	432A 27	433A 25	434A
A.10d	43 cm East-West Solar Scans (Fleurs)	422A 29	423A 31	424A 29	425A 28	426A 27	427A 27	429A151	429A 26	430A 30	431A 29	432A 28	433A 26	434A
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	422A 27	423A 29	424A 27	425A 26	426A 25	427A 25	428A 22	430A175	430A 28	431A 27	432A 26	433A 24	434A
A.10f	3 cm East-West Solar Scans (Toyokawa)	422A 26	423A 28	424A 26	425A 25	426A 24	427A 24	428A 21	429A 23	430A 27	431A 26	432A 25	433A 23	434A
A.11g	Solar X-ray (SMS/GOES) (graphs)	427B 28	428B 24	429B 26	430B 16	431B 27	432B 30	433B 26	434B 6					
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	424B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A 38	---	
A.12e	Energetic Solar Particles (IMP H & J)	430B 24	429B 32	429B 37	434B 50									
A.13a	Solar Wind (Pioneers 6 & 7)	---	---	---	---	---	427A 32	428A 27	429A 32	---	431A 38	432A 39	433A 36	
A.13ab	Solar Wind (Pioneers 8 & 9)	424B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A 38	433A 37	
A.13d	Solar Wind from IPS Measurements	422A 39	424B 36	424A 37	426A146	426A 34	427A 35	428A 30	430A164	430A 37	431A 36	432A 34	433A 31	434A
A.13e	Solar Plasma (IMP H & J)	427B 27	429B 23	429B 25	430B 15	432B 36	432B 29		434B 5					
A.13f	Solar Wind (Pioneer 12 (Venus))	422A 37	423A 37	424A 36	425A 32	426A 33	427A 34	428A 29	429A 33	431A161	431A 39	432A 39	433A 37	
A.17	Interplanetary Magnetic Field (Pioneer 9)	424B 39	---	---	---	426A 33	427A 33	428A 28	429A 32	431A160	431A 38	432A 38	433A 37	
A.17	Interplanetary Magnetic Field (Pioneer 12)	423B 73	424B 38	425B 29	426A116	---	---	429A119	430A127	431A125	432A132	433A131	---	
A.17c	Inferred IP Magnetic Field	422A 40	423A 38	424A 38	425A 34	426A 36	427A 36	428A 32	430A 42	430A 42	432A 40	432A 40	433A 38	
A.18	Interplanetary Electric Field (Pioneer 9)	424B 39	---	---	---	426A 32	427A 33	428A 28	429A 32	431A160	431A 38	432A138	---	
B.	IONOSPHERIC (AND RADIO WAVE PROPAGATION) PHENOMENA													
B.52	Graphs of Transmission Frequency Range	423A174	424A154	425A152	426A142	427A154	428A140	429A146	430A160	431A156	432A162	433A154	434A154	
B.53	Quality Figures Based on Frequency Ranges	423A173	424A153	425A151	426A141	427A153	428A139	429A148	430A159	431A155	432A164	433A156	434A153	
C.	FLARE-ASSOCIATED EVENTS													
C.1a	Optical Observations Flares	422A 14	423A 15	424A 15	425A 15	426A 15	427A 14	428A 15	429A 14	430A 16	431A 16	432A 16	433A 16	434A
C.1ba	Optical Observations Flares (Standardized Data)	423B 72	423A 26	424A 24	425A 24	427A158	427A 22	---	---	430A 48	431A 25	432A 23	433A 21	434A
C.1d	Flare Patrol Observations													
C.1d	Flare Patrol Observations													
C.1e	Flare Indices (by day)													
C.1f	Flare Indices (by Region)													
C.3	Solar Radio Waves - Outstanding Occurrences	427B 5	428B 5	429B 5	430B 5	431B 5	432B 5	433B 5						
	Solar Radio Waves - Fixed Frequencies - Selected	422A 30	423A 32	424A 30	425A 29	426A 28	427A 28	428A 23	429A 27	430A 31	431A 30	432A 29	433A 27	434A
C.4a	Solar Radio Spectral Obs. (Fort Davis)	423A143	424A149	426A153	426A117	427A126	428A116	429A120	430A128	431A126	432A133	433A132	434A129	
C.4d	Solar Radio Spectral Obs. (Culgoora)	423A143	424A130	425A125	426A117	427A126	428A116	429A120	430A128	431A126	432A133	433A132	434A129	
C.4e	Solar Radio Spectral Obs. (Weissenau)	423A143	424A130	425A125	426A117	427A126	428A116	429A120	430A128	431A126	432A133	434A177	434A129	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	---	---	---	---	---	---	429A120	430A128	431A126	413A158	433A132	434A129	
C.4h	Solar Radio Spectral Obs. (Owingeloo)	424A143	425A130	426A125	427A117	427A126	429A116	429A120	430A128	431A126	432A133	433A132	434A129	
C.4i	Solar Radio Spectral Obs. (Bleien)	423A143	424A130	425A125	426A117	427A126	428A116	429A120	430A128	431A126	432A133	434A177	434A129	
C.4j	Solar Radio Spectral Obs. (Manila)	---	424A130	425A125	426A117	427A126	---							
C.4k	Solar Radio Spectral Obs. (Learmonth)	423A143		425A125		427A126	428A116	429A120	430A128	431A126	433A158	433A132	434A129	
C.4l	Solar Radio Spectral Obs. (Palehua)	423A143		425A125		427A126	428A116	429A120	430A128	431A126	433A158	433A132	434A129	
C.5e	Solar X-ray (SMS/GOES) (graphs)	427B 28	428B 24	429B 26	430B 16	431B 27	432B 30	433B 26	434B 6					
C.6	Sudden Ionospheric Disturbances	423A125	424A126	425A122	426A113	427A123	428A113	429A116	430A124	431A122	432A129	433A128	434A126	
D.	GEOMAGNETIC AND MAGNETOSPHERIC PHENOMENA													
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, as, Cp	423A166	424A147	425A144	426A133	427A148	429A154	429A142	430A155	431A151	432A158	433A150	434A147	
D.1ha	27-day Chart of Kp Indices	423A168	424A149	425A146	426A135	427A150	428A137	429A144	430A157	431A153	432A160	433A152	434A149	
D.1c	27-day Chart of C9	426A136	426A136	426A136	426A136									
D.1ca	aa graph 1868 - present	426A137	426A137	426A137	426A137									
D.1d	Principal Magnetic Storms	423A171	424A152	425A149	426A140	427A151	428A138	429A145	430A158	431A154	432A161	433A153	434A152	
D.1e	Reduced Magnetograms													
D.1f	Sudden Commencement and Solar Flare Effects	423A172	425B 33	425A150	427A164	427A152	431A168	431A168	431A169	433A168	433A168	434A188		
D.1g	Equatorial Indices Dst	423A170	424A151	425A148	426A139	428A147	429A155	431A166	431A167	433A167	434A186	434A187		
D.1h	Geomagnetic Substorm Log (Boulder)	422A 43	423A 42	424A 41	425A 38	426A 40	427A 40	428A 36	429A 37	430A 45	431A 42	432A 43	433A 41	434A
F.	COSMIC RAYS													
F.1a	Cosmic Ray Neutron Counts (Deep River)	423A161	425B 32	427A159	427A159	428A146	429A153	429A137	430A154	432A170	433A165	434A183	434A146	
F.1b	Cosmic Ray Neutron Counts (Climax)	423A161	425B 32	425A143	426A132	428A146	428A134	430A167	430A154	431A150	433A165	433A147		
F.1e	Cosmic Ray Neutron Counts (Alert)	423A161	425B 32	427A159	427A159	428A146	429A153	429A137	430A154	432A170	433A165	434A183	434A146	
F.1h	Cosmic Ray Neutron Counts (Thule)	423A161	424A146	425A143	426A132	427A147	428A134	429A137	430A154	431A150	432A155	433A147		
F.1i	Cosmic Ray Neutron Counts (Kiel)	423A161	427A159	425A143	426A132	427A147	428A134	429A137	430A154	431A150	432A155	433A147	434A146	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	423A161	427A159	425A143	426A132	427A147	428A134	429A137	430A154	431A150	430A155	433A147	434A146	
F.1k	Cosmic Ray Neutron Counts (Kula)					---	---	---	---	---	---	---	---	
F.1l	Cosmic Ray Neutron Counts (Huancayo)	425B 32	425B 32	426A177	427A159	428A146	430A167	430A167	431A163	433A165				
H.	MISCELLANEOUS													
H.60	IUWDS Alert Decisions	422A 4	423A 4	424A 4	425A 4	426A 4	427A 4	428A 4	429A 4	430A 5	431A 5	432A 5	433A 5	434A
H.62	Abbreviated Calendar Record													

Notes:

"423A 50" listed under 1979 Sep means that the sunspot drawings for Sep 1979 were contained in *Solar-Geophysical Data* Number 423 - Part I, beginning on page 50.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

SGD 434 Part II (Comprehensive)

APRIL 1980 DATA

Contents

Page

Active Regions (Data not available at time of publication.)

Synoptic Solar Maps (Data not available at time of publication.)

Solar Flares (Data not available at time of publication.) SEE NOTE
H-alpha Solar Flares (Standardized Data) ON PAGE 4.
Daily Flare Indices
Intervals of No Flare Patrol Observation

Solar Radio Emission (Data not available at time of publication.)
Outstanding Occurrences (Fixed Frequencies)

Energetic Solar Particles and Plasma
IMP 8 Solar Wind Plasma 5
IMP 8 Electrons, Protons and Alpha Particles (Data not available at time of publication.)

Solar X-ray Radiation
SMS-GOES 6-10

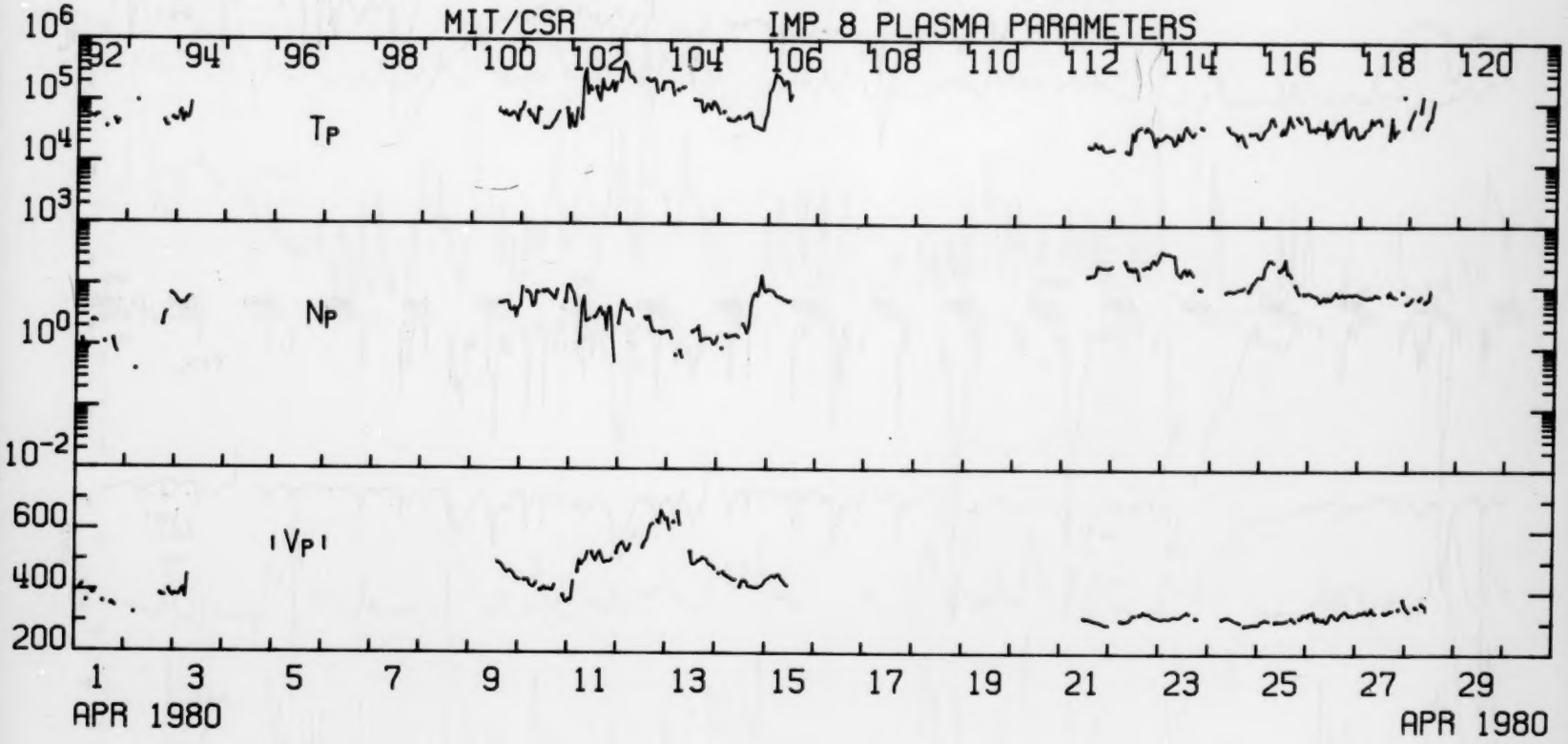
NOTE ON DELAY OF GROUPED SOLAR FLARE DATA:

Beginning with the July 1980 issue of *Solar-Geophysical Data*, we planned to publish the final listing of solar flares 13 months, rather than 6 months, from the date of observation. Although this schedule has not been met since the July 1980 issue was published, we and our colleagues at the Meudon Observatory plan to return to the 13-month delay as soon as possible. This new schedule will cause the Daily Flare Index and the Regional Flare Index to appear 13 and 14 months from the date of observation. At the same time we are suspending indefinitely publication of the Abbreviated Calendar Record. We deeply regret this situation, but the volume of data recorded during sunspot maximum and computer conversion problems at the Meudon Observatory and at NGSDC have forced these greater delays on us.

For researchers who need the comprehensive solar flare data more promptly, NGSDC has available "preliminary" listings from August through October 1979. These complete tabulations lack the final Meudon corrections, and will only be published after they have been made. Nevertheless, printouts for the August-October 1979 period are available on request, if they be recognized as "preliminary" when used in research projects. A fee may be charged for reproducing these data. Please contact the editor, Helen E. Coffey, at (303) 497-6223 or telex SOLTERWARN BLDR 45897.

IMP 8 SOLAR WIND PLASMA

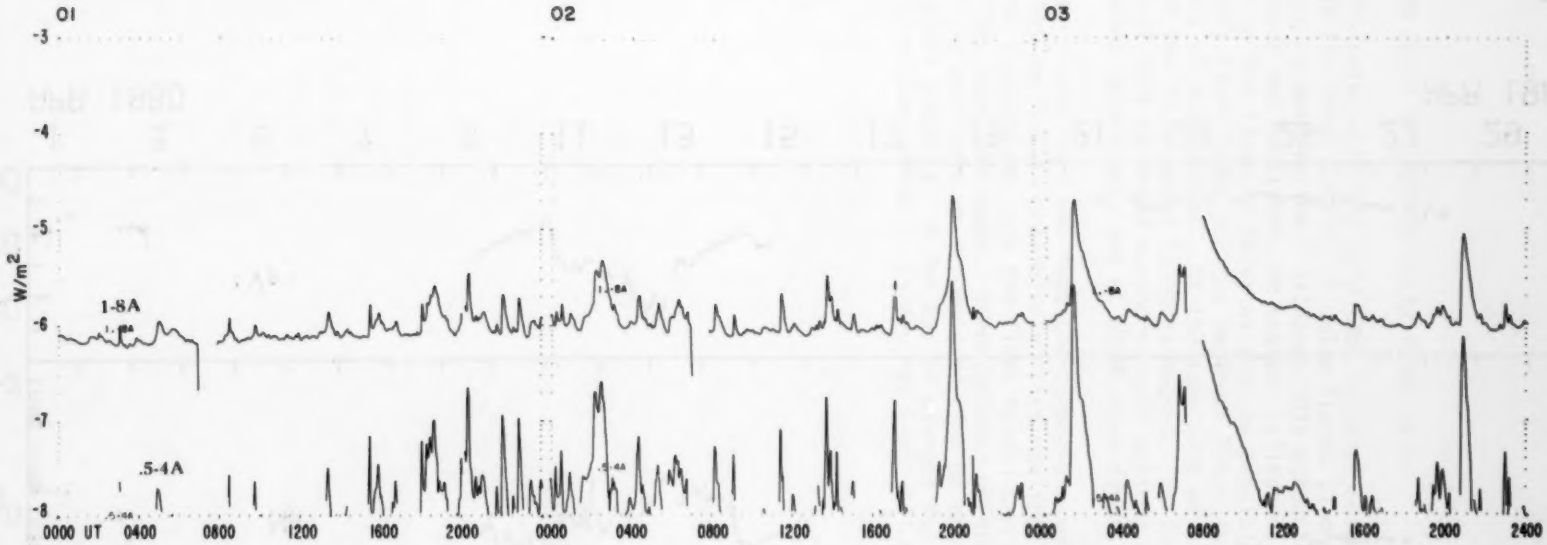
APRIL 1980

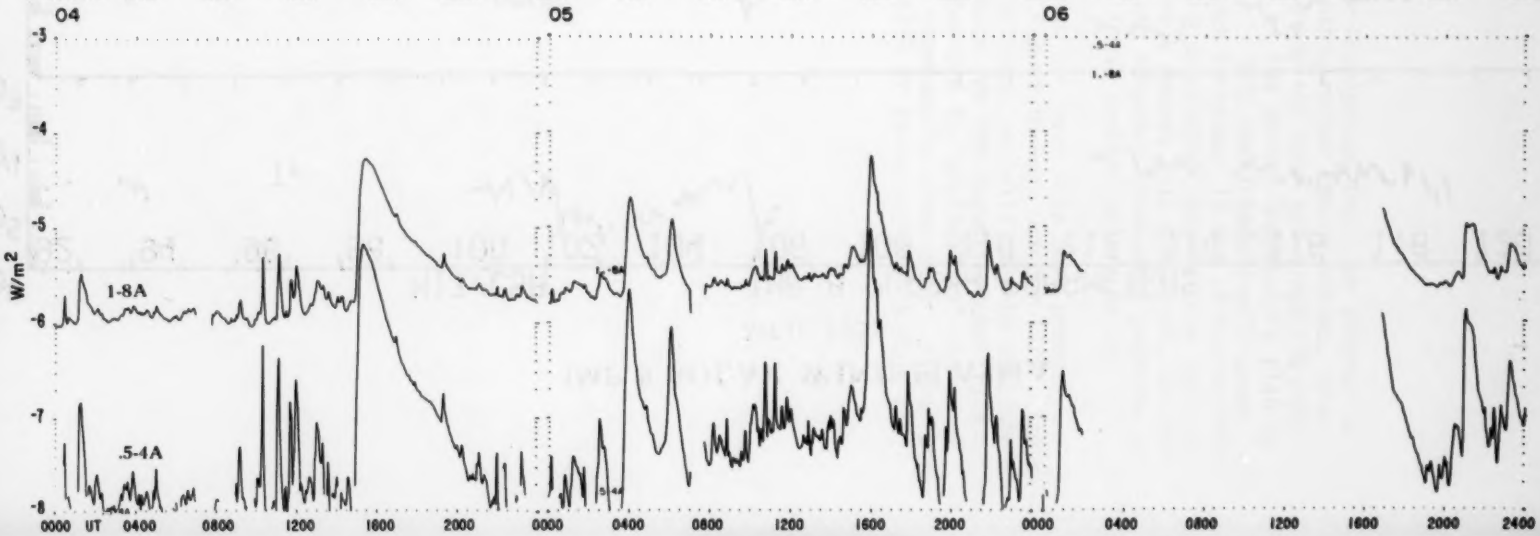


5
Apr 80

SMS-GOES X-RAYS

APRIL 1980



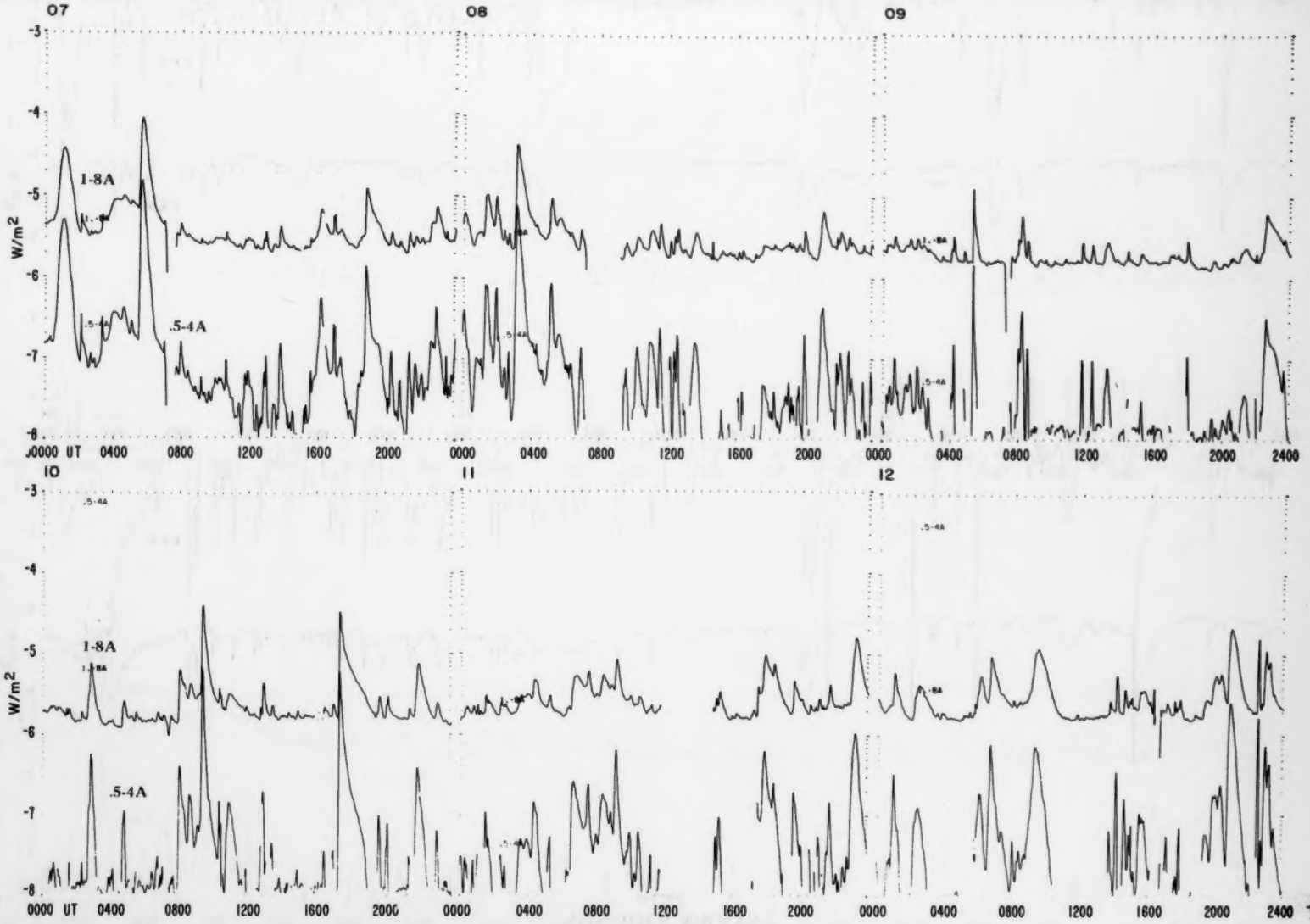


SMS-GOES X-RAYS

APRIL 1980

SMS-GOES X-RAYS

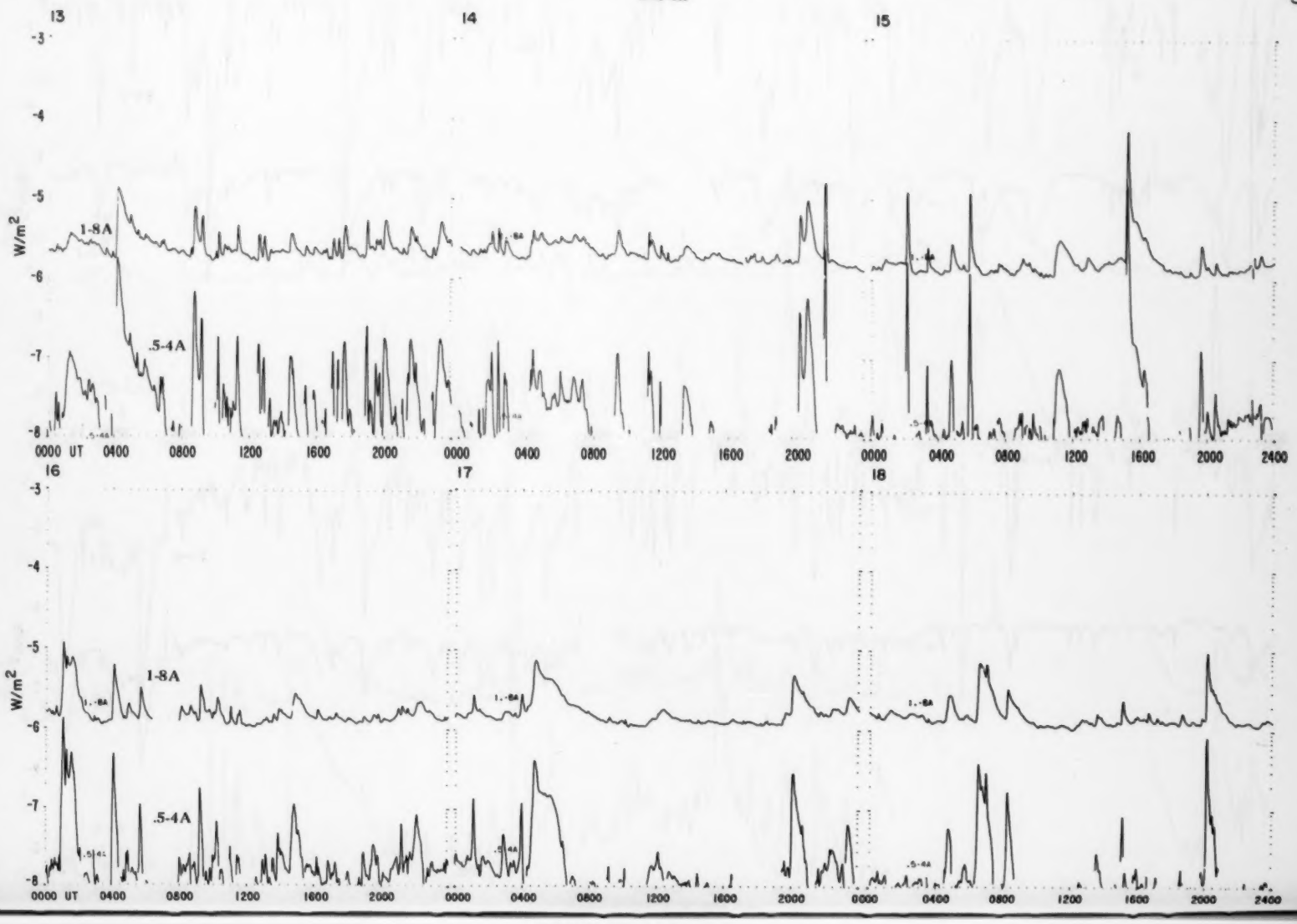
APRIL 1980



7 Apr 80

SMS-GOES X-RAYS

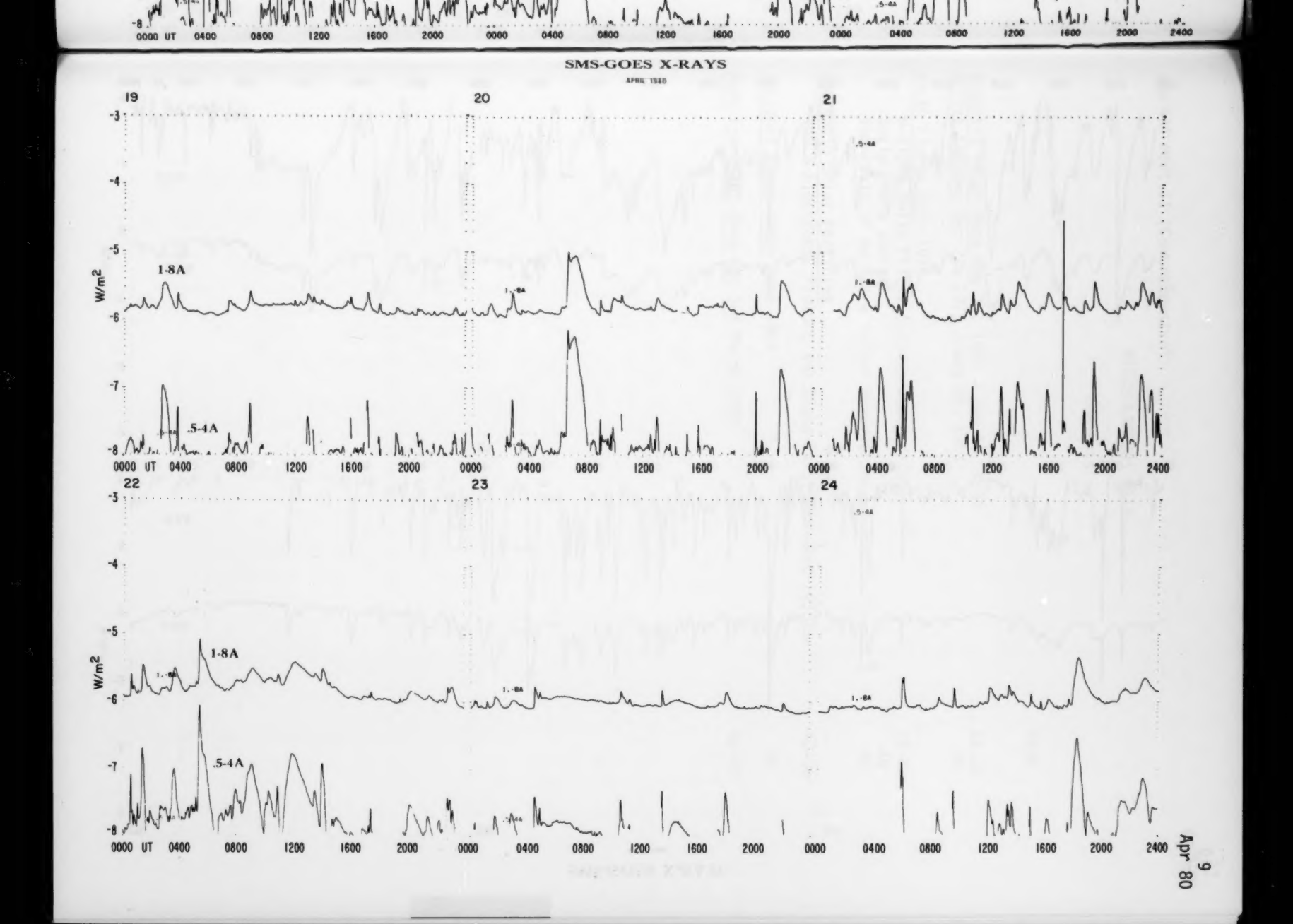
APRIL 1980



SMS-GOES X-RAYS

APRIL 1980

19
20
21


SMS-GOES X-RAYS
APRIL 1980
19
20
21
22
23
24
1-8A
.5-4A
W/m2
-3
-4
-5
-6
-7
-8
0000 UT
0400
0800
1200
1600
2000
2400

10
Apr 80

SMS-GOES X-RAYS

APRIL 1980

SGD

Sync
Acti

Sola

Ener

Regi

Mass

SGD 434 Part II (Comprehensive)

MISCELLANEOUS DATA

Contents

	Page
Synoptic Solar Maps Nov 30, 1979 - Jan 24, 1980	12-13
Active Regions Dec 27, 1979 - Jan 24, 1980	14
Solar Flares July 1979	
H-alpha Solar Flares (Standardized data)	15-48
Daily Flare Indices	48
Intervals of No Flare Patrol Observation	49
Energetic Solar Particles	
IMP 8 Electrons, Protons and Alpha Particles Dec 1979	50-54
Regional Flare Index June 1979	55
Mass Ejections from the Sun March 1980	56-57

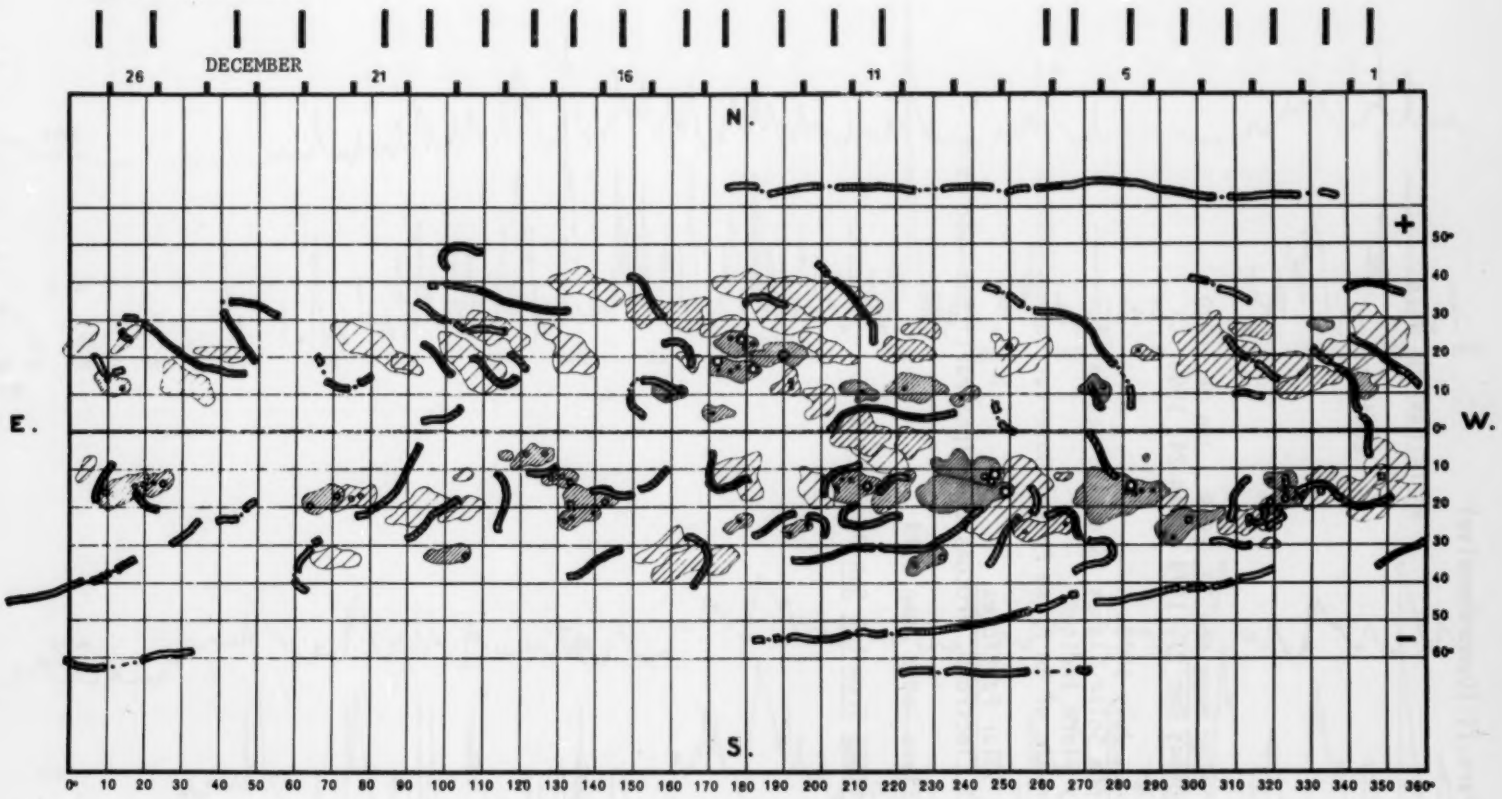
12
Misc
Nov-Dec 79

SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1689

NOVEMBER 30 – DECEMBER 27, 1979

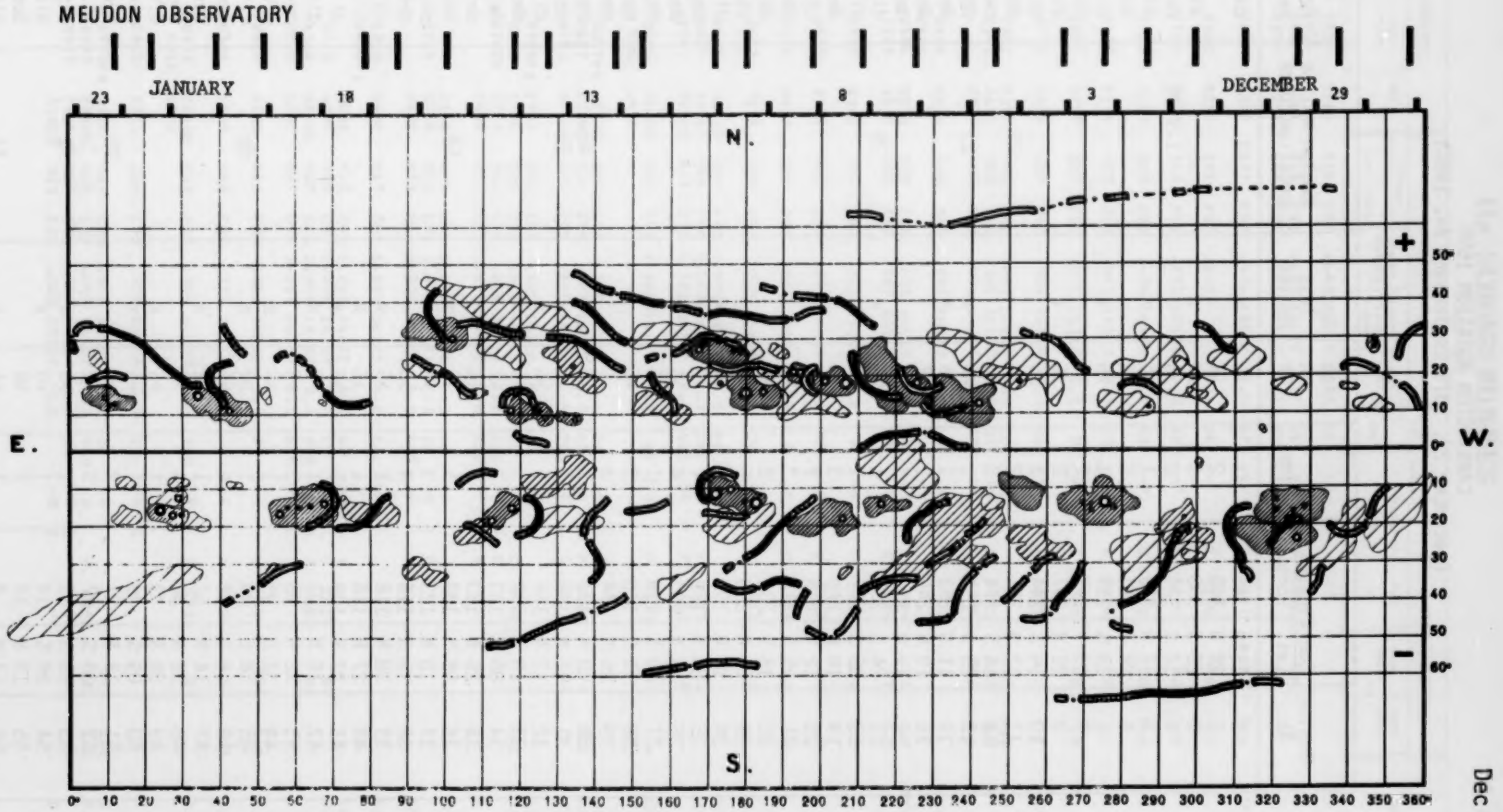
MEUDON OBSERVATORY



SYNOPTIC SOLAR MAP

CARRINGTON ROTATION 1690

DECEMBER 27, 1979 - JANUARY 24, 1980



13
Misc
Dec 79-Jan 80

ACTIVE REGIONS
CARRINGTON ROTATION 1690
(December 27, 1979 to January 24, 1980)

Region No.	Coordinates Lat.	Coordinates Long.	IMP	Age at CMP	Spot-less Region	Region No. in Rotation 1688	Activity at West Limb
1	12°N	348°	1	>6	x	3	dispersed
2	28 N	348	2	-4			?
3	25 S	338	1	>6	x		dispersed
4	16 S	325	3	>6		7-9-10	decreasing
5	17 N	325	1	>6	x		dispersed
6	24 S	321	3	>6			decreasing
7	28 S	299	1	>6	x		dispersed
8	23 S	298	2	>6			decreasing
9	21 N	297	1	>6	x		dispersed
10	19 S	294	2	>6			decreasing
11	12 N	281	2	>6		21	decreasing
12	14 S	274	5	>6			decreasing
13	25 S	259	1	>6	x	23	decreasing
14	11 S	253	1	>6	x		decreasing
15	19 N	249	2	+2			decreasing
16	13 N	237	3	>6			decreasing
17	24 S	232	1	>6	x	29	dispersed
18	05 S	222	1	>6	x		dispersed
19	19 N	220	3	>6			decreasing
20	12 N	219	2	-3			stable
21	15 S	218	2	>6			decreasing
22	18 S	201	2	>6			decreasing
23	18 N	200	5	+5			stable
24	15 N	195	1	>6	x		dispersed
25	26 N	189	1	+3	x		decreasing
26	15 N	183	4	>6			decreasing
27	20 S	179	1	>6	x		decreasing
28	13 S	178	5	+5			decreasing
29	26 N	174	3	0			decreasing
30	19 N	170	2	>6		47	decreasing
31	12 N	158	1	>6	x	53	decreasing
32	17 N	156	1	>6	x		dispersed
33	18 N	138	1	>6	x		decreasing
34	08 N	133	2	-2			decreasing
35	25 N	133	2	>6			decreasing
36	08 S	130	1	>6	x	59	decreasing
37	10 N	123	3	>6			decreasing
38	16 S	116	4	>6			decreasing
39	38 N	116	1	>6	x		dispersed
40	27 N	116	1	>6	x		dispersed
41	22 S	108	1	>6	x		dispersed
42	15 N	107	1	+1	x		dispersed
43	32 N	98	2	>6			decreasing
44	32 S	95	1	>6	x		dispersed
45	18 S	80	1	>6	x	66	dispersed
46	16 S	63	4	>6			decreasing
47	14 N	52	1	-2	x		decreasing
48	12 N	40	4	>6			decreasing
49	20 S	33	1	>6	x		dispersed
50	09 S	29	1	+5	x		disappeared
51	13 S	27	2	>6		70	decreasing
52	18 S	27	3	+2			stable
53	18 S	15	1	>6	x	71	dispersed
54	09 S	14	1	+6	x		disappeared
55	13 N	10	2	>6			decreasing
56	13 N	8	1	+4	x	73	disappeared

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg.		
GRP75776	01	0023>9	0033 0058	0104	N16	E38	.638	16117	3.9	41	-N						FU	
CULG	01	0023	0033	0058	N15	E36	.609	16117	3.7	35	-F		C	0033	50	.6	T	
HOLL	01	0046	0058	0110	N18	E41	.681	16117	4.1	24	-B	3	C		53		U F	
777 CULG	01	0103	0207	0240	S27	E63	.924	16112	5.8	97	1F		C	0207	150	3.9	KTF	ZX
778 CULG	01	0106	0110	0125	S41	W07	.699		30.5	19	-F		C	0110	50	.7	G	ZX
779 CULG	01	0112	0114	0130	S10	W51	.792	16100	27.2	18	-F		C	0114	70	.9		ZX
780 CULG	01	0114	0131	0155	N15	E23	.434	16108	2.8	41	-F		C	0131	120	1.4	UY	ZX
781 CULG	01	0121	0125	0134	N22	W70	.942	16093	25.8	13	-F		C	0125	60			ZX
782 CULG	01	0249	0251	0257	S15	E59	.875	16118	5.5	8	-N		C	0251	40	.8	T	ZX
783 CULG	01	0259	0315	0420	S27	E63	.924	16112	5.8	81	2N		C	0315	300	7.7	TLH	ZX
GRP75784	01	0327	0341	0353D	N03	E62	.882	16115	5.8	26	1N				190	4.0	EU	
CULG	01	0327	0341	0430	N03	E60	.865	16115	5.6	63	1N		C	0341	160	3.3	U	
TACH	01	0335E		0353	N03	E65	.906	16115	6.0	18	1N		V	0335	221		E	
GRP75785	01	0401	0404 0505	0530	N16	E34	.587	16117	3.7	89	-F						FHK	
CULG	01	0401	0404	0530	N17	E35	.604	16117	3.8	89	-F		C	0404	50	.7	FKH	
CULG	01	0503	0505	0530	N16	E34	.587	16117	3.8	27	-F	*	C	0505	80	1.0		
786 CULG	01	0415	0417	0422	N15	W03	.217	16104	1.0	7	-N		C	0417	120	1.2		ZX
787 CULG	01	0508	0513	0538	N03	E39	.629	16111	4.1	30	-F		C	0513	70	.9		ZX
788 CULG	01	0525	0528	0533	S05	W56	.834	16100	27.0	8	-F		C	0528	10	.2		ZX
789 CULG	01	0536	0540	0555	S28	E63	.926	16112	6.0	19	-F		C	0540	60		T	ZX
GRP75790	01	0624	0625	0650D	N07	E90	1.000	16122	8.0	26	1N						ADJV	
ABST	01	0624	0625	0644D	N06	E90	1.000	16122	8.0	200	1N		P	0625	131		ADJV	
CATA	01	0640E	0640	0650D	N08	E90	1.000	16122	8.0	100	1N	2	P	0640	56			
791 ABST	01	0638	0639	0644D	N18	E90	1.000	16121	8.0	60	? N		P	0639	87		ADV	ZX
	IMP.1 NO : MANI CATA																	
GRP75792	01	0655	0657+4	0715D	S15	E58	.867	16118	5.6	20	-N						FJ	
ABST	01	0655	0657	07090	S16	E59	.877	16118	5.7	140	1N		P	0657	174	3.8	FJ	
MANI	01	0659E	0701	0715D	S15	E58	.867	16118	5.6	160	-F	3	C		40		F	
GRP75793	01	0741	0745+1	0757	S14	E58	.865	16118	5.7	16	-F						DJ	
ABST	01	0741	0746	0755	S15	E58	.867	16118	5.7	14	1N		C	0746	87	2.1	DJ	
MANI	01	0745E	0745U	0757	S14	E58	.865	16118	5.7	120	-F	3	C		30			
ISTA	01	0750E		0800	S13	E57	.855	16118	5.6	100	-F		V				D	
GRP75794	01	0750E		0830	N23	E90	1.000	16121	8.1	40	-F						AE	
TELV	01	0744	0748	0755	N22	E90	1.000	16121	8.1	11	-N	3	C					
ISTA	01	0750E		0830	N23	E90	1.000	16121	8.1	400	-F		V				AE	
GRP75795	01	0755>9	0818 0830+0	0838	N07	E90	1.000	16122	8.1	43	-B						AJK	
ISTA	01	0755		0835	N10	E90	1.000	16122	8.1	40	-B		V				AEK	
ABST	01	0810	0818	0825	N06	E90	1.000	16122	8.1	15	1N		C	0818	87		ADJ	
CATA	01	0820	0830	0840D	N07	E90	1.000	16122	8.1	200	1B	2	P	0830	56			
KANZ	01	0830E	0830	0847	N07	E90	1.000	16122	8.1	170	-N	1						
796 ABST	01	0810	0814	0835	N18	E36	.621	16117	4.0	25	1N		C	0814	174	2.2	EJ	ZX
797 ABST	01	0818	0821	0825	N18	E45	.727	16117	4.7	7	-F		C	0821	87	1.3	DJ	ZX
798 ABST	01	0827	0838	0843D	N17	W79	.980	16093	25.4	160	? F		P	0838	87		FJ	ZX
	IMP.1 NO : CATA KANZ																	
799 KANZ	01	0834	0842	0853	S14	E55	.839	16118	5.5	19	-N	2						ZX
GRP75800	01	0856+4	0902+0	0930	N19	E38	.650	16117	4.2	34	-N				100	1.3	J	
ABST	01	0856	0902	0942D	N19	E38	.650	16117	4.2	460	-B		P	0902	131	1.6	FJ	
ATHN	01	0900	0902	0918	N15	E38	.367	16117	4.2	18	-F	1		0902	66	.6		
KANZ	01	0902E		0902D	N19	E36	.626	16117	4.1		-B	2					D	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mln of Disk	CORR AREA Sq. Deg.		
801 ABST	01	0921	0927	0935	S15	E58	.867	16118	5.7	14	?B		C	0927	131	2.8	EJ	ZX
	IMP.1 NO ! CATA																	
802 KHAR	01	1110E		1138D	S12	E55	.835	16118	5.6	28D	-F		P	1115	110	1.7	BO	ZX
803 KHAR	01	1115E	1119	1140D	N10	E89	1.000	16122	8.1	25D	-N		P	1115	80		D	ZX
804 KHAR	01	1117	1118	1125D	N16	E31	.548	16117	3.8	8D	-F		V	1118			DH	ZX
805 KHAR	01	1145E	1148	1148D	S11	E57	.851	16118	5.8	3D	1N		V	1148			D	ZX
	01	1148	1301	NO FLARE PATROL														
806 HUAN	01	1309	1317	1321	N06	E87	.998	16122	8.1	12	-F	1	C	1317	25		D	ZX
807 HUAN	01	1354	1355	1358	N06	E87	.998	16122	8.1	4	-N	1	C	1355	20		D	ZX
808 HUAN	01	1411	1413	1418	N18	E87	.998	16121	8.1	7	-F	1	C	1413	20		D	ZX
	01	1451	1454	NO FLARE PATROL														
809 HUAN	01	1527	1529	1533	N08	E85	.996	16122	8.0	6	-N	1	C	1529	25		D	ZX
810 HUAN	01	1619	1628	1629	N19	E39	.661	16117	4.6	10	-N	2	C	1620	40	.5	E	ZX
811 HOLL	01	1748	1749	1759	S15	E53	.823	16118	5.7	11	-B	3	C		46		F	ZX
812 HOLL	01	1825	1830	1834	N18	E32	.571	16117	4.2	9	-B	3	C		19		F	ZX
813 HOLL	01	1829	1850	1851	S14	E52	.811	16118	5.7	22	-B	3	C		32			ZX
GRP75814	01	1919+8	1921+2	1933	S26	E56	.877	16112	6.0	14	-N				60	1.2		
HOLL	01	1919	1921	1935	S27	E57	.887	16112	6.1	16	-B	3	C		53		FDE	
HUAN	01	1919	1923	1931	S26	E56	.877	16112	6.0	12	-N	2	C	1923	65	1.3	E	
815 HOLL	01	2007	2012	2019	N11	E80	.984	16122	7.8	12	-N	3	C					ZX
GRP75816	01	2026+4	2030+1	2047	S27	E55	.873	16112	6.0	21	-N							
HOLL	01	2026	2031	2054	S27	E55	.873	16112	6.0	28	-B	3	C		79		F	
PALE	01	2030	2030	2040	S28	E55	.876	16112	6.0	10	-N	3	C		26		DE	
GRP75817	01	2101+1	2101+1	2115	N18	E29	.533	16117	4.1	14	-B				40	.5		
HOLL	01	2101	2101	2115	N18	E30	.546	16117	4.1	14	-B	3	C		42		DE	
PALE	01	2102	2102	2115	N19	E28	.527	16117	4.0	13	-B	3	C		39		DE	
818 PALE	01	2146	2146	2210	N19	E28	.527	16117	4.0	24	-N	3	C		22		DE	ZX
GRP75819	01	2307E	2307+1	2315	N14	W12	.208	16104	1.1	8	-B				70	.7	H	
PALE	01	2307E	2308U	2315D	N12	W12	.259	16104	1.1	8D	-B	3	C		61		DE	
MANI	01	2307E	2307U	2312	N14	W12	.208	16104	1.1	5D	-B	2	C		60			
CULG	01	2312E	2312U	2340	N16	W13	.315	16104	1.0	28D	-N		P	2312	100	1.1	H	
820 CULG	02	0200	0203	0211	S10	W70	.945	16100	26.8	11	-N		C	0203	20			ZX
821 CULG	02	0210	0211U	02110	N19	E24	.476	16117	3.9	10	-N		P	0211	30	.4		ZX
822 CULG	02	0222E	0222E	0255	S25	E43	.768	16112	5.3	33D	-N		P	0222	80	1.3		ZX
823 CULG	02	0222E	0224U	0241	N18	E34	.595	16117	4.6	19D	-N	*	P	0224	40	.5		ZX
824 CULG	02	0302	0305	0321	S14	E47	.761	16118	5.7	19	-F		C	0305	30	.5	T	ZX
825 CULG	02	0307	0310	0326	N09	E90	1.000	16122	8.9	19	-F		C	0310	20			ZX
GRP75826	02	0309+5	0314+3	0331	N15	W15	.327	16104	1.0	22	-N							
CULG	02	0309	0317	03400	N16	W16	.349	16104	30.9	31D	-N		P	0317	80	.9	F	
PALE	02	0314	0314	0321	N14	W15	.317	16104	1.0	7	-N	3	C		33		DE	
	02	0328	0330	NO FLARE PATROL														
827 CULG	02	0338	0339U	03400	N18	E34	.595	16117	4.7	20	-F		P	0339	30	.4		ZX
828 CULG	02	0439	0441	0448	S24	W22	.565	16103	30.5	9	-F		C	0441	10	.1		ZX
GRP75829	02	0453	0503+3	0534	N06	E78	.977	16122	8.1	41	1N				200		DJ	
CULG	02	0453	0503	0534	N06	E78	.977	16122	8.1	41	1F		C	0503	140			
ABST	02	0505E	0506	05110	N07	E78	.977	16122	8.1	6D	2N		P	0506	262		DJ	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LNG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP75830	02	0859+1	0902+0	0914	N16	W17	.362	16104	1.1	15	-B				80	.9	H	
MONT	02	0859	0902	0916	N16	W19	.387	16104	30.9	17	-N		C	0902	50		H	
ATHN	02	0900	0902	0918	N15	W18	.366	16104	1.0	18	-B	3	C		64		DE	
MANI	02	0900	0902	0910	N16	W15	.337	16104	1.3	10	-B	3	V		100			
MANI	02	0903E	0903U	0911	N16	W17	.362	16104	1.1	8D	-N	3	P		100	1.1		
831 KHAR	02	1018E		1058D	N14	W20	.385	16104	30.9	40D	-F		P	1018				ZX
832 KHAR	02	1103E		1103D	N16	E16	.349	16117	3.7		-F		P	1103	100	1.0	D	ZX
	02	1216	1225	NO FLARE PATROL														
	02	1232	1321	NO FLARE PATROL														
GRP75833	02	1406+3	1410+1	1417	N14	W20	.385	16104	1.1	11	-F						D	
LVOV	02	1406	1410	1419	N13	W20	.37[illegible]	16104	1.1	13	-N		C	1410	150	1.7	D	
HUAN	02	1409	1411	1415	N15	W20	.392	16104	1.1	6	-F	1	C	1411	25	.3	D	
	02	1520	1658	NO FLARE PATROL														
GRP75834	02	1857+2	1902+2 1912	1936	S28	E42	.776	16112	5.9	39	1B				130	2.1	H	
HCMA	02	1845E		1955	S28	E42	.776	16112	5.9	70D	1B		P	1903	125	2.1	E	
HUAN	02	1857	1904	1936	S27	E42	.770	16112	5.9	39	1N	1	C	1904	125	2.0	E	
PALE	02	1859	1902	1929	S29	E43	.789	16112	6.0	30	-B	3	C		135		H F	
RAMY	02	1912	1912	1919D	S29	E41	.773	16112	5.9	7D	1B	3	C		235		F	
835 HOLL	02	1946	1955	2004	N14	W26	.469	16104	30.9	18	-N	3	C		34		F	ZX
GRP75836	02	2010+0	2021+2	2046	N09	E65	.905	16122	7.7	36	-N				60	1.4		
HOLL	02	2010	2023	2037	N09	E66	.912	16122	7.8	27	-B	3	C		46		F	
HCMA	02	2010E	2021	2055	N10	E65	.905	16122	7.7	45D	-N		C	2021	80	1.9	E	
837 HCMA	02	2035E		2047D	N16	W26	.480	16104	30.9	12D	-F		P	2042	30	.4	D	ZX
838 BIGB	02	2149	2153	2209	S10	E00	.224		2.9	20	-F	2	C	2153	100	1.0		ZX
839 HOLL	02	2150	2153	2157	N11	E72	.950	16122	8.3	7	-B	3	C		45			ZX
840 CULG	02	2259	2311U	2354	N12	E02	.161	16126	3.1	55	-F		C	2311	60	.6	S	ZX
841 CULG	02	2314	2443	0200	S00	E35	.575	16115	5.6	166	?N		C	2443	350	4.5	FS	ZX
	IMP.1 NO : PALE																	
842 CULG	02	2339	2351	0009	S20	E29	.596	16112	5.2	30	?F		P	2351	180	2.4		ZX
	IMP.1 NO : BIGB																	
843 CULG	03	0053	0102	0140	S09	W85	.997	16100	26.7	47	-N		C	0102	60		T	ZX
844 CULG	03	0058	010E	0111	N25	E56	.849	16120	7.2	13	-N		C	010E	80	1.5		ZX
845 CULG	03	0117	0125	0145	N17	E14	.335	16117	4.1	28	-F		C	0125	90	1.0	T	ZX
846 CULG	03	0138	0141	0148	N05	E18	.310	16111	4.4	10	-F		C	0141	30	.3		ZX
847 CULG	03	0140	0152	0203	S15	E34	.619	16118	5.6	23	-F		C	0152	120	1.6		ZX
848 CULG	03	0254	0303	0337	N08	E64	.898	16122	7.9	43	1F		C	0303	130	2.6		ZX
849 CULG	03	0350	0357	0435	N08	E64	.898	16122	8.0	45	1F		C	0357	120	2.4		ZX
850 CULG	03	0400	0407	0418	N19	E13	.348	16117	4.1	18	-F		C	0407	120	1.3	T	ZX
851 CULG	03	0413	0426	0438	S17	E14	.413	16112	4.2	25	-F		C	0426	30	.4	HT	ZX
852 CULG	03	0443	0452	0524	S16	E32	.601	16118	5.6	41	-F		C	0452	130	1.7	F	ZX
853 CULG	03	0526	0533	0543	S30	E34	.724	16112	5.8	17	-N		C	0533	80	1.2		ZX
854 CULG	03	0555	0605	0613	S17	E13	.404	16112	4.2	18	-F		C	0605	50	.6	T	ZX
855 CULG	03	0603	0617	0637D	N06	E90	1.000	16123	10.0	34D	-N		C	0617	40			ZX
856 ABST	03	0703	0705	0710	N24	E90	1.000	16123	10.0	7	?N		C	0705	87		DJ	ZX
	IMP.1 NO : HTPR																	
857 HTPR	03	0940E		0955	N05	E05	.093	16111	3.8	15D	-F		C	0940	30	.3	E	ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS AREA Mill of Disk	CORR AREA Sq. Deg.		
858 KHAR	03	1024E	1024	1030D	N12	E58	.849	16122	7.8	6D	-F		V	1024			D	ZX
859 KHAR	03	1031E	1032	1038D	N10	E60	.865	16122	7.9	7D	-F		V	1032			DHL	ZX
860 KHAR	03	1058E	1100	1108D	N11	E59	.857	16122	7.9	10D	-F		V	1100			EH	ZX
GRP75861	03	1115E	1116 1128	1133	N13	E56	.831	16122	7.7	18	-F						L	
KHAR	03	1115E	1116	1130D	N15	E57	.842	16122	7.7	15D	-F		P	1116			DL	
KHAR	03	1127	1128	1133	N11	E55	.820	16122	7.6	6	-F	*	P	1128	65	1.0	DL	
GRP75862	03	1125E	1132	1145D	N19	E07	.298	16117	4.0	20	-F						E	
HTPR	03	1125E		1130D	N19	E08	.305	16117	4.1	5D	-F		C	1126	30	.3	E	
KHAR	03	1127E	1132	1145D	N20	E07	.313	16117	4.0	18D	-F		P	1132			E	
863 KHAR	03	1137	1138	1144	N08	W14	.255	16126	2.4	7	-F		P	1138			D	ZX
864 KHAR	03	1150		1155D	N08	W14	.255	16126	2.4	5D	-F		P	1150			D	ZX
GRP75865	03	1220+1	1222+2 1230+3	1300	N08	E57	.838	16122	7.8	40	-B				110	2.0	EK	
HTPR	03	1220	1230	1300	N08	E56	.828	16122	7.7	40	-B		C	1230	100	1.7	E	
TELV	03	1220	1222	1256	N15	E57	.842	16122	7.8	36	1N		C	1233	120	2.3	K	
RAMY	03	1221	1224	1227D	N09	E57	.838	16122	7.8	6D	-B	3	C		134		F	
KHAR	03	1223E	1233	1300D	N08	E57	.838	16122	7.8	37D	1N		P				E	
GRP75866	03	1527+3	1530+1	1538	N14	E01	.190	16117	3.7	11	-N							
HTPR	03	1527	1530	1540	N15	E01	.207	16117	3.7	13	-B		C	1530	180	1.8		
HUAN	03	1530	1531	1535	N14	E02	.193	16117	3.8	5	-F	1	C	1531	65	.6		
867 HTPR	03	1615	1618	1630	N09	W15	.276	16126	2.6	15	-F		C	1618	20	.2	E	ZX
868 HTPR	03	1730	1736	1750	N07	E61	.873	16122	8.3	20	-F		C	1736	10	.2		ZX
GRP75869	03	1819+4	1823	1839	N15	00	.207	16117	3.8	20	-F				50	.5		
PALE	03	1819	1823	1840	N17	E02	.243	16117	3.9	21	-N	3	C		52		DE F	
HUAN	03	1823		1837	N14	W01	.190	16117	3.7	14	-F	1	C	1824	60	.6	E	
GRP75870	03	1911	1912	1916	N15	00	.207	16117	3.8	5	-N				80	.8		
HUAN	03	1911	1912	1915	N14	W01	.190	16117	3.7	4	-N	1	C	1912	60	.6		
PALE	03	1914E	1914U	1917	N17	E02	.243	16117	4.0	3D	-N	3	C		99		DE F	
871 HUAN	03	1925		1934	N14	W02	.193	16117	3.7	9	-F	1	C	1927	30	.3	E	ZX
GRP75872	03	1958+1	2003	2019	N04	W01	.024	16111	3.8	21	-F							
PALE	03	1958	2003	2019	N05	W01	.038	16111	3.8	21	-N	3	C		51		DE F	
HUAN	03	1959		2012D	N04	W02	.038	16111	3.7	13D	-F	1	P				E	
GRP75873	03	2042+0	2045+1	2108	N17	E02	.243	16117	4.0	26	-N						J	
VORO	03	2042	2046	2108	N17	E03	.246	16117	4.1	26	1F		C	2046	206	2.1	EJ	
PALE	03	2042	2045	2108	N17	E01	.241	16117	3.9	26	-N	3	C		81		DE F	
874 VORO	03	2146	2146	2151	N17	E02	.243	16117	4.1	5	-N		C	2146	27	.3	D	ZX
875 VORO	03	2150	2153	2202	N14	W40	.656	16104	30.9	12	-N		C	2153	108	1.4	E	ZX
GRP75876	03	2208+4	2210+0	2215	N14	W02	.193	16117	3.8	7	-N				90	.9	EHU	
CULG	03	2208	2210	2214	N16	W03	.229	16117	3.7	6	-B		C	2210	100	1.0	H	
PALE	03	2209	2210	2216	N14	W02	.193	16117	3.8	7	-N	3	C		79		U H	
VORO	03	2212		2215	N13	W02	.176	16117	3.8	3	-N		P	2212	90	.9	ECH	
GRP75877	03	2225+7	2231+4	2259	N07	E55	.818	16122	8.1	34	-N				30	.5	D	
CULG	03	2225	2231	2340	N07	E55	.818	16122	8.1	75	-N	*	C	2231	40	.7		
VORO	03	2229	2235	2254	N07	E56	.828	16122	8.1	25	-N	*	C	2235	27	.4	D	
PALE	03	2232	2232	2259	N07	E55	.818	16122	8.1	27	-N	*	C		21			
878 CULG	03	2228	2235	2248	N09	E35	.578	16119	6.6	20	-F		C	2235	30	.5	T	ZX
879 CULG	03	2241	2252	2310	S30	E25	.653	16112	5.8	29	-N		C	2252	50	.7		ZX
GRP75880	03	2255+9	2308+4	2337	N04	W02	.038	16111	3.8	42	2N				550	5.5	FGIL	
CULG	03	2255	2308	2349	N05	W04	.077	16111	3.7	54	2B	*	C	2308	550	5.7	FI	
VORO	03	2301	2312	2337	N04	W02	.038	16111	3.8	36	2F	*	C	2312	556	5.6	EGL	
PALE	03	2304	2309U	2333	N03	W02	.035	16111	3.8	29	-N	*	C		158		F	
881 CULG	03	2257	2306	2321	N16	E79	.980	16123	9.9	24	-F	*	C	2306	40			ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS AREA Mill of Disk	CORR AREA Sq. Deg.		
GRP75882	03	2257+2	2303+2	2318	N18	00	.258	16117	4.0	21	-N				70	.7	E	
CULG	03	2257	2303	2320	N19	W01	.275	16117	3.9	23	-N		C	2303	80	.8		
VORO	03	2259	2305	2316	N18	E00	.258	16117	4.0	17	-N		C	2305	72	.7	E	
883 CULG	03	2331	2332	2350	N09	E35	.578	16119	6.6	19	-N		C	2332	40	.5	T	ZX
GRP75884	03	2354>9	0005+2	0021	N09	E50	.766	16122	7.7	27	-F				50	.8		
HOLL	04	0006	0007	0022	N09	E51	.777	16122	7.8	16	-N	3	C		31			
CULG	03	2354	2405	0020	N09	E50	.766	16122	7.7	26	-F		C	2405	70	1.2		
885 CULG	04	0035	0037	00570	S30	E81	.994	16125	10.1	220	-N		C	0037	40		WT	ZX
	04	0107	0120	NO FLARE PATROL														
GRP75886	04	0203	0221	0320	N07	E44	.694	16122	7.4	77	2N						IJ	
CULG	04	0203	0221	0320	N08	E45	.707	16122	7.5	77	2N		C	0221	490	7.1	FI	
VORO	04	0210E		0217D	N06	E44	.642	16122	7.4	70	1F		P	0217	179	2.5	EJ	
887 CULG	04	0238	0242	0301	S30	E80	.992	16125	10.1	23	-B		C	0242	30		WT	ZX
888 PALE	04	0421	0421	0431	N07	E50	.765	16122	7.9	10	-N	3	C		43		FDE	ZX
889 CULG	04	0524E	0531	0546	S18	E85	.998	16124	10.6	220	-N		C	0531	20			ZX
890 CULG	04	0553	0556	0621	S32	E80	.993	16125	10.2	28	-F		C	0556	40		K	ZX
GRP75891	04	0601+7	0609+4	0647	N08	E47	.731	16122	7.8	46	1B				240	3.5	EL	
CULG	04	0601	0609	0621D	N08	E46	.719	16122	7.7	20D	1B		C	0609	320	5.0	L	
CATA	04	0605E	0613	0630D	N07	E47	.731	16122	7.8	25D	1B	2	P	0613	281	4.2		
HTPR	04	0606E		0635D	N08	E45	.707	16122	7.6	29D	1B		C	0608	220	3.1	E	
MITK	04	0608		0649D	N09	E49	.755	16122	7.9	41D	1N		C	0609	210	3.3	E	
ATHN	04	0615E	0615	0645	N07	E47	.919	16122	7.8	30D	-N	1		0615	82	1.0		
GRP75892	04	0615+0	0615+3 0701	0713	S17	E83	.995	16124	10.5	58	-N				40		DK	
ATHN	04	0615E	0615	0636	S20	E78	.984	16124	10.1	21D	-N	*		0615	33	1.3		
HTPR	04	0615	0618	0715	S16	E80	.988	16124	10.3	60	-B	*	C	0618	60			
CULG	04	0615	0618	0621D	S18	E85	.998	16124	10.6	6D	-N	*	C	0618	40			
ISTA	04	0645E		0825	S14	E83	.995	16124	10.5	100D	-N	*	V				DK	
MONT	04	0654E	0701	0711	S16	E86	.999	16124	10.7	17D	-F	*	C	0701	40		D	
GRP75893	04	0730>9	0743+2	0753	S16	E80	.988	16124	10.3	23	-N				30			
HTPR	04	0730	0743	0750	S16	E80	.988	16124	10.3	20	-N	*	C	0743	30			
CATA	04	0745	0745	0755	S16	E80	.988	16124	10.3	10	-B	*	C	0745	28			
GRP75894	04	0752+6	0758+1 0819	0836	N17	W02	.241	16117	4.2	44	-F						EKU	
TELV	04	0752	0759	0844	N17	W06	.259	16117	3.9	52	1F		C	0820	245	2.5	KU	
HTPR	04	0753	0758	0830	N18	E01	.256	16117	4.4	37	-F		C	0758	20	.2	E	
MONT	04	0755	0819	0841	N18	W03	.261	16117	4.1	46	-N		C	0819	110		E	
ISTA	04	0758		0815	N17	W01	.239	16117	4.3	17	-N		V				E	
GRP75895	04	0805+5	0815+3	0824	S16	E80	.988	16124	10.3	19	-N				50		D	
YUNN	04	0805	0815	0830	S16	E80	.988	16124	10.3	25	1N	*	C		64			
HTPR	04	0806	0816	0824	S16	E79	.986	16124	10.3	18	-B	*	C	0816	40			
MONT	04	0810	0818	0822	S16	E86	.999	16124	10.8	12	-F	*	C	0818	40		D	
GRP75896	04	0829+6	0845>9 0937	0947	N08	E46	.719	16122	7.8	78	1B				170	2.5	EI	
HTPR	04	0829	0903	0955	N08	E44	.695	16122	7.7	86	1B	*	C	0903	160	2.3	EI	
ATHN	04	0830	0850	0922	N07	E45	.905	16122	7.7	52	1B	4	C		143			
ISTA	04	0830	0855	0930	N09	E50	.766	16122	8.1	60	1B	*	V				F	
MONT	04	0834	0855	0958	N08	E47	.731	16122	7.9	84	-N	*	C	0855	150			
CATA	04	0835	0845	0940D	N09	E45	.708	16122	7.7	65D	1B	*	P	0845	224	3.2		
KHAR	04	0850E	0858	0955D	N07	E46	.719	16122	7.8	65D	1B	*	P	0904	165	2.6	E	
YUNN	04	0935	0937	1008	N07	E46	.719	16122	7.8	33	1B	*	C		193			
ZURI	04	0939E	0939	0941D	N05	E46	.718	16122	7.9	20	1N	*	P	0939	150	2.3		
897 YUNN	04	0937	0940	1000	S28	E84	.998	16125	10.7	23	?N		C		94			ZX
	IMP.1 NO 1 HTPR			CATA	MONT	TELV	ZURI											

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
GRP75898	04	0939+8	0954+4 1004+1	1045	N17	W43	.788	16104	1.2	66	1N				360	5.1	GJ	
TELV	04	0939	1004	1108	N15	W44	.706	16104	1.1	81	1B		C	1004	380	4.3		
YUNN	04	0940	0954	1045	N17	W42	.688	16104	1.3	65	2N		C		482			
KHAR	04	0945E		0955D	N17	W44	.711	16104	1.1	100	1F		P				E	
MONT	04	0947	0958	1041	N16	W42	.685	16104	1.3	54	1N		C	0958	250			
CATA	04	0950E	1005	1025D	N18	W43	.703	16104	1.2	350	2N	2	P	1005	393	5.6		
ABST	04	1033E	1036	1045D	N20	W40	.675	16104	1.4	120	1N		P	1036	174	2.5	FJG	
GRP75899	04	1028>9	1041+1	1102	N15	W07	.237	16117	3.9	34	-F				140	1.4	EJU	
TELV	04	1028	1042	1102	N15	W10	.265	16117	3.7	34	-F		C	1042	120	1.2	U	
ABST	04	1038	1041	1045D	N16	W04	.232	16117	4.1	70	-N		P	1041	174	1.9	EJ	
900 RAMY	04	1134E	1137	1140D	S28	E79	.990	16125	10.4	60	-B	3	V		60			ZX
	04	1145	1150	NO FLARE PATROL														
901 ZURI	04	1150E	1151	1151D	S17	E78	.983	16124	10.3	10	-N		P	1151	50			ZX
	04	1151	1154	NO FLARE PATROL														
	04	1300	1326	NO FLARE PATROL														
902 MCMA	04	1343	1344	1347	N17	E47	.745	16121	8.1	4	-F		C	1344	40	.6	D	ZX
903 MCMA	04	1349	1358	1420	N10	E46	.721	16122	8.0	31	-N		C	1358	25	.4	D	ZX
904 MCMA	04	1411	1412	1427	N16	W08	.260	16117	4.0	16	-N		C	1412	40	.4	E	ZX
905 MCMA	04	1412	1414	1447	N13	W23	.419	16126	2.9	35	-F		C	1414	60	.7	E	ZX
GRP75906	04	1441+1	1443+2	1506	N10	E44	.697	16122	7.9	25	-B				70	1.0	E	
RAMY	04	1441	1443	1445D	N11	E44	.698	16122	7.9	40	-B	3	V		68			
MCMA	04	1441	1443	1505	N10	E44	.697	16122	7.9	24	-B		C	1443	60	.9	E	
HUAN	04	1442		1445D	N10	E44	.697	16122	7.9	30	-N	2	P	1443	45	.6	E	
HOLL	04	1442	1445	1506	N11	E44	.698	16122	7.9	24	-B	3	C		79		DE	
ZURI	04	1443E	1443	1459D	N10	E43	.685	16122	7.8	160	1N		P	1443	180	2.6		
907 MCMA	04	1606	1609	1622	N14	W50	.772	16104	30.9	16	-N		C	1609	50	.8	DH	ZX
GRP75908	04	1635+1	1637+2	1647	N13	W50	.770	16104	30.9	12	-F				30	.5		
MCMA	04	1635	1639	1650	N14	W50	.772	16104	30.9	15	-N		C	1639	40	.7	E	
HUAN	04	1636	1637	1643	N13	W51	.781	16104	30.9	7	-F	1	C	1637	20	.3	D	
GRP75909	04	1639+3	1644	1659	N08	E43	.683	16122	7.9	20	-F				30	.4	E	
MCMA	04	1639	1644	1659	N09	E44	.696	16122	8.0	20	-N		C	1644	30	.4	E	
HUAN	04	1642		1644D	N08	E43	.683	16122	7.9	20	-F	1	P	1642	30	.4	E	
910 MCMA	04	1701	1715	1730	S28	E16	.570	16112	5.9	29	-N		C	1715	60	.7	E	ZX
911 MCMA	04	1712	1745	1902	N16	W13	.311	16117	3.7	110	-N		C	1745	125	1.4	EF	ZX
912 MCMA	04	1750	1753	1756D	S29	E76	.983	16125	10.4	60	-N		C	1753	20	.9	D	ZX
	04	1804	1811	NO FLARE PATROL														
GRP75913	04	1903+4	1920+3 1942	2110	N11	E36	.595	16122	7.5	127	1B				370	4.6	ILY	
MCMA	04	1903	1942	2120D	N13	E35	.587	16122	7.4	137D	2B		C	1942	500	6.3	FILY	
HUAN	04	1904		1908D	N08	E43	.683	16122	8.0	40	-F	1	P				E	
RAMY	04	1905	1920	1922D	N11	E39	.635	16122	7.7	170	2B	3	V		482		F	
PALE	04	1907	1923	2059	N10	E33	.551	16122	7.3	112	1B	3	C		270		FDE	
HUAN	04	1917E		1943D	N14	E33	.564	16122	7.3	260	1N	1	P	1934	290	3.5	CE	
GRP75914	04	1937+3	1942+1	1958	S28	E69	.957	16125	10.0	21	-B				50		E	
PALE	04	1937E	1943U	1955	S28	E70	.961	16125	10.1	180	-B	3	C		35		F	
MCMA	04	1937	1942	2001	S31	E71	.968	16125	10.1	24	-B		C	1942	40	1.6	E	
HUAN	04	1937		1943D	S29	E69	.958	16125	10.0	60	-N	1	P				E	
RAMY	04	1940	1943	1945D	S27	E69	.956	16125	10.0	90	-B	3	V		58			
915 CULG	04	2151E	2151U	2338	N18	E30	.588	16119	7.2	107D	?N		P	2232	340	4.4	IBF	ZX
	IMP.1 NO ; PALE																	
916 PALE	04	2216	2217	2222	N20	E65	.910	16123	9.8	6	-N	3	C		23		U F	ZX
917 CULG	04	2232E	2232U	2234	N07	E41	.656	16122	8.0	20	-N		C	2232	130	1.7		ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONC	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
GRP75918	05	0649+8	0654+5	0727	S29	E11	.559	16112	6.1	38	1N				190	2.3	E	
MITK	05	0649E	0656	0735D	S29	E12	.563	16112	6.2	46D	-N		C	0656			E	
HTPR	05	0650	0654	0715	S27	E10	.527	16112	6.0	25	-N		C	0654	180	2.0	E	
MONT	05	0651	0656	0706D	S30	E14	.586	16112	6.3	15D	1N		C	0656	250			
ATHN	05	0657	0659	0719	S31	E03	.565	16112	5.5	22	-N	1		0659	98	1.1		
CATA	05	0700E	0700	0748D	S29	E12	.563	16112	6.2	40D	1N	2	P	0700	196	2.4		
GRP75919	05	0744+0	0745 0752	0804	N19	W15	.366	16117	4.2	20	-F						E	
YUNN	05	0744	0745	0800	N20	W15	.378	16117	4.2	16	1F		C		177			
KANZ	05	0744E	0752	0804	N19	W15	.366	16117	4.2	20D	-F	2						
MONT	05	0757E	0757	0810	N19	W14	.356	16117	4.3	13D	-F		C	0757	50		E	
GRP75920	05	0927+1	0931+0	1018	S14	E02	.299	16118	5.5	51	-N				80	.8	E	
KANZ	05	0927	0931	1004D	S15	E03	.318	16118	5.6	37D	-N	2						
HTPR	05	0928		1001D	S14	E02	.299	16118	5.5	33D	-N		C	0933	70	.7	E	
MONT	05	0928	0931	1018	S14	E02	.299	16118	5.5	50	-N		C	0931	100			
GRP75921	05	0929+2	0931+2	0948	S18	W14	.428	16112	4.3	11	-F				50	.6	E	
HTPR	05	0929	0933	0940	S18	W14	.428	16112	4.3	11	-F		C	0933	50	.6	E	
MONT	05	0930	0931	0941	S17	W14	.415	16112	4.3	11	-F		C	0931	50		E	
KANZ	05	0931	0931	0939	S18	W14	.428	16112	4.3	8	-F	2						
922 MCMA	05	1428	1432	1436	S29	E66	.945	16125	10.6	8	-F		C	1432	30	.8	E	ZX
GRP75923	05	1758+3	1802+1	1819	S14	W03	.301	16118	5.5	21	-B				70	.7		
MCMA	05	1758E	1803	1820	S14	W03	.301	16118	5.5	22D	-B		C	1803	70	.8	E	
PALE	05	1801	1802	1817	S14	W03	.301	16118	5.5	16	-B	3	C		65		F	
GRP75924	05	1834+2	1834+4	1855	S28	E61	.916	16125	10.3	21	-N				30			
MCMA	05	1834	1835	1855	S29	E62	.924	16125	10.4	21	-N		C	1835	25	.7	D	
PALE	05	1834	1834	1840	S28	E58	.898	16125	10.1	6	-N	3	C		29			
HOLL	05	1836	1838	1857	S27	E61	.914	16125	10.4	21	-B	3	C		27		F	
GRP75925	05	1952+1	1954+3	2020	S28	E60	.910	16125	10.3	28	-N				50	1.2		
MCMA	05	1952	1957	2020	S29	E60	.913	16125	10.3	28	-N		C	1957	50	1.3	E	
HOLL	05	1952	1954	2032	S28	E59	.904	16125	10.3	40	-B	3	C		52		F	
BIGB	05	1953	1954	2007	S25	E60	.904	16125	10.3	14	1N	2	C	1954	140	2.9		
GRP75926	05	2025+2	2036+0	2109	N21	E52	.804	16123	9.8	44	1N				130	2.2		
HOLL	05	2025	2036	2109	N22	E52	.806	16123	9.8	44	1B	3	C		163		F	
MCMA	05	2027	2036	2103D	N21	E53	.814	16123	9.8	36D	-N		C	2036	100	1.7	E	
GRP75927	05	2116+1	2116+1	2127	N16	W26	.478	16117	3.9	11	-N				20	.2	F	
PALE	05	2116	2116	2124D	N16	W26	.478	16117	3.9	8D	-N	3	C		19		F	
HOLL	05	2117	2117	2127	N16	W26	.478	16117	3.9	10	-B	3	C		24		F	
928 HOLL	05	2129	2131	2140	N16	W42	.685	16108	2.7	11	-B	3	C		43			ZX
GRP75929	05	2144+5	2152+2 2203	2253	N15	W33	.567	16117	3.4	69	-N				130	1.6	FU	
HOLL	05	2144	2154	2303	N15	W33	.567	16117	3.4	79	-B	3	C		115		U F	
HOLL	05	2144	2203	2303	N15	W33	.567	16117	3.4	79	-N	3	C		61		U F	
BIGB	05	2149	2152	2216	N13	W33	.560	16117	3.4	27	-N	2	P	2152	150	1.8		
BIGB	05	2213	2223	2258	N16	W37	.623	16117	3.2	45	-B	2	C	2223	130	1.7		
PALE	05	2235	2235	2244	N16	W28	.505	16117	3.8	9	-N	3	C		42		F	
PALE	05	2245	2245	2248	N16	W28	.505	16117	3.8	3	-N	3	C		32		F	
930 HOLL	05	2221	2229	2236	S26	E55	.672	16125	10.1	15	-B	3	C		82			ZX
931 HOLL	05	2321	2323	2333	N15	W65	.986	16104	1.1	12	-N	3	C		14			ZX
GRP75932	06	0007+0	0017 0024	0038	S16	W04	.339	16118	5.7	31	-N						F	
BIGB	06	0007	0017	0045	S17	W04	.355	16118	5.7	38	-N	2	C	0017	90	.9		
HOLL	06	0007	0024	0031	S16	W04	.339	16118	5.7	24	-B	3	C		34		F	
GRP75933	06	0025+0	0028+1	0037	N15	W68	.926	16104	30.9	12	-N							
HOLL	06	0025	0028	0037	N15	W68	.926	16104	30.9	12	-B	3	C		24			
BIGB	06	0025	0029	0037	N15	W68	.926	16104	30.9	12	-N	2	C	0029	60			
934 HOLL	06	0132	0134	0200D	N18	W27	.503	16117	4.0	28D	-B	2	C		96		F	ZX
935 ABST	06	0454E	0454	0458D	S17	W07	.367	16118	5.7	4D	-F		P	0454	140	1.5	BEJ	ZX
936 CATA	06	0750	0825	0915	S30	E44	.806	16125	9.6	85	?B	2	C	0825	281	4.8		ZX

IMP.1 NO : HTPR

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.	
937 MCMA	06	1401E	1401	1406	N13	E16	.317	16122	7.8	50	-F		C	1401	50	.5	EL ZX
GRP75938	06	1432+2	1437+4	1459	N22	E43	.715	16123	9.8	27	-N				35	.5	
MCMA	06	1432	1437	1503	N22	E45	.736	16123	10.0	31	-N		C	1437	40	.6	E
HOLL	06	1434	1441	1455	N22	E42	.704	16123	9.8	21	-B	3	C		30		F
GRP75939	06	1459+1	1500+1	1509	S30	W05	.555	16112	6.2	10	-F				45	.5	E
BIGB	06	1459	1500	1510	S31	W05	.570	16112	6.2	11	-N	2	C	1500	60	.6	
HTPR	06	1500	1501	1507	S30	W06	.557	16112	6.2	7	-F		C	1501	30	.3	E
GRP75940	06	1604+1	1606 1614	1621	N18	W36	.618	16117	4.8	17	-F						E
MCMA	06	1604	1614	1630D	N18	W36	.618	16117	4.8	260	-F		C	1614	50	.7	E
HOLL	06	1605	1606	1611	N18	W37	.630	16117	3.9	6	-N	3	C		20		
941 MCMA	06	1605E	1618	1643D	S15	W15	.401	16118	5.5	380	-N		C	1618	60	.7	E ZX
942 MCMA	06	1642	1647	1656D	N09	E13	.243	16122	7.7	140	-F		C	1647	20	.2	D ZX
943 BIGB	06	1724	1725	1728	N12	W77	.973	16104	31.8	4	-F	2	C	1725	40		A ZX
944 HOLL	06	1817	1818	1825	N22	E40	.682	16123	9.8	8	-N	3	C		37		ZX
945 MCMA	06	1843	1844	1856	S18	W13	.422	16118	5.8	13	-N		C	1844	50	.6	E ZX
946 HOLL	06	2019	2031U	2050	N22	E41	.693	16123	9.9	31	-B	3	C		85		ZX
947 BIGB	06	2121	2123	2131	N15	W80	.983	16104	30.9	10	-F	2	C	2123	40		A ZX
948 HOLL	06	2142	2143	2207	N12	E13	.267	16122	7.9	25	-N	3	C		29		ZX
949 HOLL	06	2214	2214	2229D	S27	E42	.773	16125	10.1	150	-N	3	C		26		F ZX
950 PURP	07	0250	0300	0320	N11	W87	.177	16119	6.6	30	? N		C				G ZX
	IMP.1 NO ! CULG PALE																
GRP75951	07	0438+6	0438 0448	0516	N17	W54	.815	16117	3.1	38	1N						E
PURP	07	0438E	0438	0450	N17	W47	.743	16117	3.7	12D	1N		P				
TACH	07	0444	0448	0516	N18	W54	.817	16117	3.1	32	1B		C	0448	177	3.1	E
MITK	07	0457	0500	0520D	N17	W54	.815	16117	3.2	23D	1N		C	0500	130	2.2	E
GRP75952	07	0744+1	0752 0819	0859	S30	E45	.814	16125	10.7	75	1N						EH
MITK	07	0744E	0752	0825	S30	E45	.814	16125	10.7	41D	1N		C	0752	170	2.8	E
BUCA	07	0745		0811D	S28	E42	.780	16125	10.5	26D	-N		C	0800	107	1.7	E
ISTA	07	0802E		0840D	S30	E46	.822	16125	10.8	38D	1B		V				F
MONT	07	0816E	0819	0918	S29	E43	.793	16125	10.6	62D	1B		C	0819	300		H
ZURI	07	0845E	0858	0930	S32	E49	.852	16125	11.0	45D	-F		P	0858	90	1.8	
953 ZURI	07	1028	1032	1038	S28	W17	.581	16112	6.2	10	-F		C	1032	100	1.3	ZX
GRP75954	07	1122+1	1123+1	1138	N28	E55	.845	16127	11.6	8	-N				30	.6	DH
MCMA	07	1122	1124	1130	N28	E58	.869	16127	11.8	8	-N		C	1124	25	.5	DH
RAMY	07	1123	1123	1129	N29	E52	.824	16127	11.4	6	-B	3	C		30		
GRP75955	07	1135+1	1140+2	1150	S16	E38	.673	16124	10.3	15	-N						E
CATA	07	1135	1140	1150D	S17	E38	.679	16124	10.3	15D	-N	2	P	1140	140	1.9	
MCMA	07	1136	1142	1150	S16	E38	.673	16124	10.3	14	-N		C	1142	50	.7	E
GRP75956	07	1257+0	1259+1	1312	N04	W48	.742	16111	3.9	15	-B						D
RAMY	07	1257	1300	1313	N04	W48	.742	16111	3.9	16	-B	3	C		145		
MCMA	07	1257	1259	1310	N05	W48	.742	16111	3.9	13	-B		C	1259	50	.8	D
957 HOLL	07	1531	1532	1544	S27	E38	.740	16125	10.5	13	-N	3	C		21		ZX
958 HOLL	07	1531	1534	1541	S14	W28	.542	16118	5.5	10	-N	*	C		22		ZX
959 HOLL	07	1942	1951	2006	S23	W41	.743	16112	4.7	24	-B	3	C		39		F ZX
GRP75960	07	2200+2	2205+4	2221	S16	E38	.581	16124	10.2	21	-N				80	1.0	
VORO	07	2200		2227	S15	E30	.574	16124	10.2	27	1F		P	2219	224	2.8	E
PALE	07	2201	2205	2228	S17	E30	.588	16124	10.2	19	-B	3	C		67		DE F
BIGB	07	2202	2209	2221	S16	E31	.592	16124	10.2	19	-B	2	C	2209	100	1.2	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
GRP75961	07	2220+9	2230+5	2252	N10	W11	.220	16119	7.1	32	-N				70	.7	EH	
VORO	07	2220	2234	2252	N10	W11	.220	16119	7.1	32	1F		P	2234	448	4.7	EH	
BIGB	07	2220	2235	2300	N10	W12	.235	16119	7.0	40	-N	2	C	2235	70	1.2		
PALE	07	2229	2230	2235	N06	W09	.174	16119	7.3	6	-N	3	C		47		F	
MITK	07	2239		2252	N11	W13	.257	16119	7.0	13	-N		P	2239			E	
962 VORO	07	2233	2234	2247	N07	W55	.818	16111	3.8	14	?F		C	2234	134	2.3	DG	ZX
	IMP.1 NO : BIGB PALE																	
GRP75963	08	0009+1	0017 0033	0101	S15	E30	.574	16124	10.3	52	1N							
PALE	08	0009	0033	0042	S17	E30	.585	16124	10.3	33	-N	3	C		44		DE	
BIGB	08	0010	0017	0101E	S15	E30	.574	16124	10.3	51D	1B	2	P	0017	210	2.5		
YUNN	08	0054	0055	0103	S15	E30	.574	16124	10.3	9	1F		C		209			
964 PALE	08	0105	0105	0108	N20	E22	.454	16123	9.7	3	-N	3	C		22		DE	ZX
965 VORO	08	0158E		0232	N21	E24	.486	16123	9.9	34D	?F		P	0159	206	2.3	CEJ	ZX
	IMP.1 NO : PALE CULG																	
966 ABST	08	0518	0522	0525	S17	E25	.532	16124	10.1	7	-F		C	0522	87	1.1	EJ	ZX
967 ABST	08	0545	0547	0550	N22	E46	.746	16127	11.7	5	-F		C	0547	87	1.2	DJ	ZX
968 ISTA	08	0655		0710	S15	E28	.550	16124	10.4	15	-N		V				E	ZX
GRP75969	08	0704	0705	0710	N26	E45	.750	16127	11.7	6	1N				190	2.9	EJV	
ABST	08	0704	0705	0710	N27	E46	.763	16127	11.7	6	1N		C	0705	174	2.5	EJV	
YUNN	08	0708	0708	0710	N26	E44	.740	16127	11.6	2	1F		C		225			
970 ISTA	08	0832		0840	N22	E18	.428	16123	9.7	8	-F		V				D	ZX
971 ABST	08	0852	0854	0900	N27	E46	.763	16127	11.8	8	-N		C	0854	131	1.8	EJ	ZX
972 YUNN	08	1035	1035	1045	N26	E42	.720	16127	11.6	10	?N		C		273			ZX
	IMP.1 NO : CATA																	
GRP75973	08	1040+5	1044+1	1100	N11	W05	.155	16122	8.1	20	-N				130	1.3		
TELV	08	1040	1044	1059	N12	W06	.179	16122	8.0	19	-N		C	1044	120	1.2		
CATA	08	1045	1045	1100	N11	W04	.146	16122	8.1	15	-N	2	C	1045	140	1.4		
974 CATA	08	1105	1115	1120	N11	W08	.188	16122	7.9	15	-N	2	C	1115	56	.6		ZX
GRP75975	08	1130	1139	1224	N18	E14	.340	16123	9.5	54	1N				320	3.4	EU	
TELV	08	1130	1139	1218	N19	E10	.313	16123	9.2	48	1N		C	1139	360	3.8	U	
MCMA	08	1136E		1230D	N18	E15	.351	16123	9.6	54D	-N		C	1155	125	1.4	E	
CATA	08	1145E	1145	1157D	N17	E14	.329	16123	9.5	12D	1B	2	P	1145	281	3.0		
	08	1230	1237	NO FLARE PATROL														
GRP75976	08	1340	1341	1348D	N28	E41	.719	16127	11.6	8	-N						EU	
MCMA	08	1340	1341	1348	N28	E43	.735	16127	11.8	8	-N		C	1341	30	.4	E	
HOLL	08	1344E	1344U	1429	N29	E40	.715	16127	11.6	45D	-B	3	C		184		UDE	
GRP75977	08	1428+1	1433+4 1444+6	1532	S28	E25	.639	16125	10.5	64	1B				170	2.2	U	
HOLL	08	1428	1433	1531	S28	E21	.609	16125	10.2	63	-B	3	C		167		UDE	
MCMA	08	1429	1450	1530D	S30	E27	.674	16125	10.6	61D	-N		C	1450	100	1.4	E	
RAMY	08	1431E	1437U	1532	S28	E25	.639	16125	10.5	61D	-B	2	C		171		U F	
KANZ	08	1441E	1444	1500D	S28	E25	.639	16125	10.5	19D	-N	1						
GRP75978	08	1529+3	1532+1	1543	N28	E39	.700	16127	11.6	14	-N				35	.5	F	
KANZ	08	1529	1533	1543	N27	E39	.694	16127	11.6	14	-F	2						
HOLL	08	1531	1533	1543	N29	E39	.705	16127	11.6	12	-B	3	C		41		F	
RAMY	08	1532	1532	1537	N28	E40	.710	16127	11.6	5	-N	2	C		25			
GRP75979	08	1641+5	1647+1	1701	S28	W51	.851	16112	4.9	20	-N				70	1.3		
BIGB	08	1641	1647	1700	S29	W50	.848	16112	4.9	19	-N	1	P	1647	100	1.6		
RAMY	08	1646	1648	1702	S27	W52	.855	16112	4.8	16	-N	2	C		45			
GRP75980	08	1717+0	1718+0 1734	1743	N10	W82	.989	16126	2.6	26	-N							
MCMA	08	1717	1718	1725D	N11	W82	.989	16126	2.6	8D	-F		C	1718			E	
HOLL	08	1717	1718	1747	N10	W80	.983	16126	2.7	30	-B	3	C				F	
RAMY	08	1729	1734	1739	N09	W82	.989	16126	2.6	10	-N	2	C		19			

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS AREA Mill of Disk	CORR AREA Sq. Deg.		
GRP75981	08	1722>9	1747 1756+3	1806	N29	E38	.696	16127	11.6	44	-N				30	.4	F	
PALE	08	1722	1756	1803	N27	E36	.664	16127	11.4	41	-N	*	C		24		F	
HOLL	08	1738	1759	1810	N29	E38	.696	16127	11.6	32	-B	*	C		39			
RAMY	08	1745	1747	1806	N29	E38	.696	16127	11.6	21	-N	*	C		23			
GRP75982	08	1723+6	1727+2	1740	N23	E16	.420	16123	9.9	17	-N				30	.3	E	
MCNA	08	1723		1749D	N23	E16	.420	16123	9.9	26D	-F		P	1725	25	.3	E	
HOLL	08	1726	1727	1737	N22	E15	.398	16123	9.9	11	-N	3	C		26			
RAMY	08	1729	1729	1740	N23	E17	.429	16123	10.0	11	-N	3	C		40			
GRP75983	08	1833+0	1835+1	1843	N28	E36	.670	16127	11.5	10	-N				20	.3	F	
PALE	08	1833	1835	1842	N27	E35	.653	16127	11.4	9	-N	3	C		18		F	
HOLL	08	1833	1836	1844	N29	E37	.686	16127	11.5	11	-B	3	C		24			
GRP75984	08	1849+1	1853+1	1910	N23	W17	.429	16120	7.5	21	-N				100	1.1	F	
BIGB	08	1849	1853	1911	N24	W18	.451	16120	7.4	22	-N	1	P	1853	130	1.4		
HOLL	08	1850	1854	1908	N23	W17	.429	16120	7.5	18	-N	3	C		82		F	
985 BIGB	08	1918	1921	1954	S33	W34	.752	16112	6.3	36	-B	2	C	1921	120	1.5	G	ZX
986 HOLL	08	1926	1930	1942	N23	W17	.429	16120	7.5	16	-N	3	C		26			ZX
987 HOLL	08	1949	1953	2004	S25	W55	.870	16112	4.7	15	-N	*	C		22			ZX
GRP75988	08	2008+4	2028+2	2115	N29	E38	.696	16127	11.7	67	1B				320	4.5	GKZ	
PALE	08	2008	2030	2112	N27	E35	.653	16127	11.5	64	1B	3	C		335		DE F	
HOLL	08	2012	2030	2116	N29	E38	.696	16127	11.7	64	1B	3	C		348		ZDE	
RAMY	08	2012	2028	2101D	N29	E38	.696	16127	11.7	49D	1B	3	C		214			
BIGB	08	2027	2029	2115	N31	E38	.708	16127	11.7	48	1B	2	P	2029	390	3.8	GK	
989 RAMY	08	2012	2023	2047	S24	W56	.875	16112	4.6	35	-B	3	C		38			ZX
GRP75990	08	2151+1	2152+1	2201	N29	E33	.647	16127	11.4	10	-B				30	.4	GK	
BIGB	08	2151	2153	2200	N29	E33	.647	16127	11.4	9	-B	2	P	2153	90	1.1	GK	
PALE	08	2152E	2153U	2201D	N27	E34	.643	16127	11.5	9D	-N	3	C		32		DE	
HOLL	08	2152	2152	2208	N30	E33	.654	16127	11.4	16	-B	3	C		19			
GRP75991	08	2200+1	2209+5 2222	2313	N09	W13	.242	16122	7.9	73	-B				110	1.1		
BIGB	08	2200	2222	2313	N09	W12	.226	16122	8.0	73	-B	2	P	2222	170	1.8		
PALE	08	2201E	2209U	2242D	N09	W13	.242	16122	7.9	41D	-N	3	C		79		FDE	
HOLL	08	2201	2214	2258	N08	W13	.236	16122	7.9	57	-B	3	C		143		F	
BIGB	08	2252	2255	2329	N11	W14	.271	16122	7.9	37	-B	2	C	2255	50	.5		
GRP75992	08	2217+5	2223+1	2229	N28	E37	.680	16127	11.7	12	-B				110	1.5	G	
CULG	08	2217	2223	2230	N28	E38	.690	16127	11.8	13	1N		C	2223	140	2.0	T	
PALE	08	2218E	2224U	2236D	N27	E33	.633	16127	11.4	18D	-B	3	C		96		DE	
HOLL	08	2220	2224	2228	N29	E37	.686	16127	11.7	8	-B	3	C		43		DE	
BIGB	08	2222	2223	2227	N29	E37	.686	16127	11.7	5	-B	2	C	2223	120	1.5	G	
993 CULG	09	0000	0008	0023	N09	W15	.272	16122	7.9	23	-F		C	0008	60	.6		ZX
994 CULG	09	0018	0025	0112	N13	W73	.954	16117	3.5	54	-F		C	0025	30			ZX
995 PALE	09	0033E	0035U	0100D	N27	E32	.622	16127	11.4	27D	-N	3	C		46		DE	ZX
996 CULG	09	0033	0042	0101	N10	W35	.578	16119	6.4	28	-F		C	0042	60	.7	F	ZX
GRP75997	09	0036+0	0038+0	0112	N22	E11	.361	16123	9.8	36	-N						J	
CULG	09	0036	0038	0112	N23	E12	.383	16123	9.9	36	-N		C	0038	70	.8	J	
BIGB	09	0036	0038	0059E	N22	E10	.354	16123	9.8	23D	-N	1	P	0038	180	1.8		
998 CULG	09	0123	0126	0134D	N10	W34	.564	16119	6.5	11D	-N		C	0126	140	1.7		ZX
	09	0135	0143	NO FLARE PATROL														
	09	0215	0222	NO FLARE PATROL														
	09	0250	0303	NO FLARE PATROL														
999 TACH	09	0330	0333	0338D	N28	W33	.639		6.7	8	?F		V	0333	159	2.1	D	ZX
	IMP.1 NO 1 MITK																	
0 ABST	09	0723E	0728	0739D	N10	W37	.605	16119	6.5	16D	-F		P	0728	87	1.1	D	ZX
GRP76801	09	0723>9	0743 0826	0833	N28	E32	.629	16127	11.7	7D	-F						D	
ABST	09	0723E	0743	0835D	N29	E34	.656	16127	11.9	72D	-F	*	P	0743	105	1.4	D	
KANZ	09	0822	0826	0830	N28	E31	.619	16127	11.7	8	-F	*						

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS AREA Millionths of Disk	CORR AREA Sq Deg		
2 ABST	09	0809E	0815	0816D	N23	W26	.525	16120	7.4	7D	-F		P	0815	87	1.0	D	ZX
GRP76003	09	0830>9	0838 0845	0855D	S17	W50	.804	16118	5.6	25	1N							
KANZ	09	0830	0838	0843D	S16	W50	.801	16118	5.6	13D	1N	2						
CATA	09	0840	0845	0855D	S18	W50	.807	16118	5.6	15D	1N	2	P	0845	168	2.9		
4 TELV	09	0903	0913	0958	N15	W34	.578	16119	6.8	55	-F		C	0913	120	1.4		ZX
GRP76005	09	0914+2	0917+2	0944	N19	E05	.277	16123	9.8	30	-N				110	1.1	EJV	
TELV	09	0902	0919	0948	N19	E03	.268	16123	9.6	46	-N	*	C	0919	80	.8		
MONT	09	0914	0918	0940	N19	E05	.277	16123	9.8	26	-N	*	C	0918	110			
ABST	09	0916	0917	0938D	N19	E05	.277	16123	9.8	22D	1N	*	P	0917	279	3.0	EJV	
6 YUNN	09	0956	0958	1012	S18	W52	.826	16118	5.5	16	?N		C		243			ZX
	IMP.1 NO : MONT TELV																	
	09	1145	1203	NO FLARE PATROL														
	09	1225	1235	NO FLARE PATROL														
GRP76007	09	1347>9	1347 1359	1414	N12	W22	.395	16122	7.9	27	-B							
RAMY	09	1347	1347U	1404D	N12	W23	.410	16122	7.8	17D	-N	2	C		27			
ZURI	09	1357	1359	1411	N13	W21	.386	16122	8.0	14	-B		C	1359	130	1.5		
HOLL	09	1404E	1404U	1416	N11	W22	.391	16122	7.9	12D	-B	3	C		26			
8 HOLL	09	1450	1452	1458	N11	W17	.315	16122	8.3	8	-N	3	C		20		F	ZX
9 BIGB	09	1547	1549	1613	N23	E04	.337	16123	10.0	26	-N	2	C	1549	90	.9		ZX
10 BIGB	09	1630	1639	1657	N07	W44	.694	16115	6.4	27	-F	2	C	1639	60	.9		ZX
GRP76011	09	1844	1902 1912+0	1915D	S29	E13	.574	16125	10.8	31	-B						FU	
HOLL	09	1844	1912	2103	S29	E11	.565	16125	10.6	139	1B	3	C		234		U F	
PALE	09	1850E	1912U	1915D	S30	E15	.597	16125	10.9	25D	-B	3	C		63		U F	
PALE	09	1850E	1902U	1915D	S30	E15	.597	16125	10.9	25D	-F	3	C		121		U F	
GRP76012	09	1929+1	1935+6	2045	S30	E13	.587	16125	10.8	76	1N				180	2.2	FU	
HOLL	09	1844	1935	2103	S29	E11	.565	16125	10.6	139	1N	3	C		266		U F	
RAMY	09	1929	1941	2045D	S30	E13	.587	16125	10.8	76D	-N	2	C		121		U	
BIGB	09	1930	1936	2039	S30	E15	.597	16125	10.9	69	-N	3	C	1936	180	1.9		
13 HOLL	09	2023	2024	2028	N22	W37	.646	16120	7.1	5	-B	3	C		39			ZX
GRP76014	09	2032+6	2036+3	2112	N22	W01	.314	16123	9.8	40	-B				140	1.5	F	
HOLL	09	2032	2037	2114	N23	W01	.331	16123	9.8	42	-B	3	C		105		F	
RAMY	09	2033	2036	2045D	N22	E00	.314	16123	9.9	12D	-B	2	C		100		F	
BIGB	09	2038	2039	2110	N22	W01	.314	16123	9.8	32	1N	3	C	2039	200	2.1		
15 HOLL	09	2050	2051	2058	S23	W67	.943	16112	4.8	8	-N	3	C		16			ZX
GRP76016	09	2115+4	2117+3	2144	N18	W20	.411	16121	8.4	29	1N				260	2.9		
BIGB	09	2115	2117	2146	N18	W22	.436	16121	8.2	31	1N	3	C	2117	250	2.8		
HOLL	09	2119	2120	2141	N18	W19	.398	16121	8.5	22	1B	3	C		270		DE	
17 HOLL	09	2124	2125	2131	N29	E24	.560	16127	11.7	7	-N	3	C		24			ZX
GRP76018	09	2155	2157 2214	2241	N22	W01	.314	16123	9.8	46	-B							
HOLL	09	2155	2157	2231	N22	E00	.314	16123	9.9	36	-B	3	C		57			
CULG	09	2204E	2214	2250	N22	W03	.318	16123	9.7	46D	-F		P	2214	40	.4		
19 CULG	09	2212	2218U	2241	S32	E08	.595	16125	10.5	29	-F		P	2218	40	.8		ZX
20 CULG	09	2315	2316	2333	S15	W07	.341	16124	9.4	18	-F		P	2316	30	.3		ZX
GRP76021	09	2330+0	2330+4	2344	N12	W28	.484	16122	7.9	14	-N				50	.6	F	
BIGB	09	2330	2331	2340	N12	W28	.624	16122	7.9	10	-N	*	C	2331	70	.8		
MANI	09	2330E	2330U	2338D	N12	W28	.484	16122	7.9	8D	-B	3	V		50		F	
CULG	09	2333U	2334	2348	N14	W28	.492	16122	7.9	15D	-N		P	2334	60	.7		
PALE	09	2333E	2334U	2338D	N13	W29	.502	16122	7.8	5D	-N	3	C		21			
22 BIGB	10	0001	0003	0006	S30	E05	.561	16125	10.4	5	-N	3	C	0003	30	.3		ZX
23 CULG	10	0120	0126	0143	N08	W58	.846	16115	5.7	23	?B		C	0126	140	2.5	H	ZX
	IMP.1 NO : HOLL PALE																	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS AREA Mill of Disk	CORR AREA Sq Deg		
24 PALE	10	0146	0148	0156	N13	W29	.501	16122	7.9	10	-N	3	C		20		F	ZX
25 YUNN	10	0223	0224	0225	N08	W57	.837	16115	5.8	2	? N		C		113			ZX
	IMP.1 NO ‡ MITK PALE																	
26 CULG	10	0411	0421	0436	S29	E02	.543	16125	10.3	25	-F		C	0421	20	.2		ZX
27 CULG	10	0420E	0422U	0432	N21	W03	.388	16123	10.8	120	-N		P	0422	40	.4	CT	ZX
GRP76028	10	0441>9	0446 0513	0519D	N10	W38	.506	16122	7.9	38	-F						DJK	
CULG	10	0441	0446	0519	N10	W29	.491	16122	8.0	38	-F		C	0446	30	.3	KT	
ABST	10	0511	0513	0607D	N11	W32	.537	16122	7.8	56D	1F		P	0513	175	2.1	DJ	
29 CULG	10	0502	0503	0516	N18	W19	.397	16121	8.8	14	-F		C	0503	20	.2		ZX
30 ABST	10	0546	0548	0550	N23	W39	.673	16120	7.3	4	-F		C	0547	131	1.8	FJ	ZX
GRP76031	10	0553	0617	0654	N20	W05	.291	16123	9.9	61	-N						EJ	
ABST	10	0553	0617	0702	N21	W07	.317	16123	9.7	69	-F		C	0617	87	.9	DJ	
ABST	10	0553	0617	0702	N20	W03	.283	16123	10.0	69	-F		C	0617	87	.9	DJ	
ISTA	10	0620E		0645	N20	W06	.296	16123	9.8	25D	-B		V				E	
32 ABST	10	0706	0711	0732	N10	W38	.506	16122	8.0	26	-N		P	0711	87	.9	DJ	ZX
33 KHAR	10	0808E		0848D	N11	E48	.744	16133	13.9	40D	-F		P	0816	40	.6	FGHLT	ZX
34 KHAR	10	0810E		0827D	S15	W01	.323	16124	10.3	17D	-F		P				E	ZX
35 KHAR	10	0816E		0816D	N08	W34	.560	16122	7.8		-F	*	P	0816	100	1.4		ZX
36 KHAR	10	0816E		0816D	S28	W69	.959	16112	5.2		-F		P				D	ZX
GRP76037	10	0851	0858+4	0935	N11	E48	.744	16133	14.0	44	-F						EGJL	
ABST	10	0851	0902	0935	N12	E50	.767	16133	14.1	44	-N		C	0902	96	1.5	DJ	
KHAR	10	0852E	0858	0900D	N11	E48	.744	16133	14.0	8D	-F		V	0858			EGLT	
KHAR	10	0907E		0917D	N11	E48	.744	16133	14.0	10D	-F		P	0907	20	.3	EGLT	
38 KHAR	10	0905E		0917D	N29	E16	.491	16127	11.6	12D	-F		P	0905			E	ZX
39 MONT	10	0949	0953	1008	N23	W07	.348	16123	9.9	19	-N		C	0953	110			ZX
GRP76040	10	1048+2	1051+9	1106	N22	W10	.352	16123	9.7	18	-F				80	.9	E	
TELV	10	1048	1051	1105	N22	W11	.360	16123	9.6	17	-F		C	1051	120	1.2		
HTPR	10	1049	1055	1106	N21	W08	.323	16123	9.9	17	-F		C	1055	60	.7	E	
CATA	10	1050	1100	1105D	N22	W10	.352	16123	9.7	15D	-N	1	P	1100	67	.7		
41 ZURI	10	1208	1220	1232D	N20	W11	.332	16123	9.7	24D	? N		P	1220	370	4.8		ZX
	IMP.1 NO ‡ HTPR																	
GRP76042	10	1303+1	1306+0 1313+1	1330	N22	W09	.345	16123	9.9	27	-N						E	
HTPR	10	1303	1306	1324	N22	W07	.332	16123	10.0	21	-F		C	1306	80	.9	E	
ZURI	10	1304	1306	1310D	N20	W11	.332	16123	9.7	6D	-N		P	1306	150	1.7		
RAMY	10	1304	1314	1346	N25	W08	.383	16123	9.9	42	-B	3	C		112		F	
MCMA	10	1308E		1335	N23	W09	.360	16123	9.9	27D	-N		P	1310	50	.5	BE	
HOLL	10	1310	1313	1318	N22	W09	.345	16123	9.9	8	-B	3	C		38			
43 BIGB	10	1448	1451	1503	N22	W09	.345	16123	9.9	15	-N	3	C	1451	70	.7	E	ZX
44 HOLL	10	1517	1521	1525	N23	W11	.374	16123	9.8	8	-N	3	C		25			ZX
45 HOLL	10	1729	1741	1759	N23	W43	.716	16120	7.5	30	-N	3	C		22			ZX
46 HOLL	10	1944	1946	1953	N26	E11	.416	16127	11.6	9	-N	3	C		42			ZX
47 MCMA	10	1958E	2002	2008	N23	W11	.374	16123	10.0	10D	-F		C	2002	40	.4	E	ZX
GRP76048	10	2036	2039	2054	N22	W11	.360	16123	10.0	18	-N				50	.5		
HOLL	10	2036	2039	2053	N22	W12	.368	16123	10.0	17	-B	3	C		61		F	
MCMA	10	2037E		2055	N23	W11	.374	16123	10.0	18D	-N		C	2039	50	.5	E	
GRP76049	10	2123	2129 2155	2212	N23	W12	.382	16123	10.0	49	-B						F	
HOLL	10	2123	2129	2157	N23	W12	.382	16123	10.0	34	-B	3	C		90		F	
CULG	10	2153E	2155	2226	N23	W13	.390	16123	9.9	33D	1F		C	2155	180	2.0		

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF	TYPE	TIME UT	MEAS AREA Mill of Disk	CORR AREA Sq. Deg.		
GRP76050	10	2240+5	2247+3	2256	S15	W09	.355	16124	10.3	16	-F				35	.4		
CULG	10	2240	2247	2255	S15	W10	.363	16124	10.2	15	-F		C	2247	50	.5	T	
HOLL	10	2245	2250	2257	S16	W09	.370	16124	10.3	12	-N	3	C		21			
GRP76051	10	2308+0	2310+3	2328	N23	W13	.390	16123	10.0	20	-N				180	2.0	F	
BIGB	10	2308	2313	2318	N23	W13	.390	16123	10.0	10	-N	3	C	2313	180	1.9		
HOLL	10	2308	2310	2328	N22	W15	.395	16123	9.8	20	-B	3	C		58		F	
CULG	10	2316E	2316U	2340	N23	W13	.390	16123	10.0	240	1N		P	2316	250	2.7	CT	
52 CULG	10	2316E	2321	2351	S35	E85	.999	16137	17.3	350	?N		P	2321	100		CG	ZX
	IMP.1 NO : HOLL BIGB																	
53 CULG	11	0023	0028	0037	N05	W71	.944	16115	5.7	14	-F		C	0028	30			ZX
GRP76054	11	0122+3	0127	0215	N22	W15	.394	16123	9.9	53	-N						H	
			0140+1															
CULG	11	0122	0151	0216	N22	W13	.375	16123	10.1	54	-N		C	0151	80	.9		
HOLL	11	0127	0140	0150D	N22	W15	.394	16123	9.9	23D	-B	2	C		79		F	
HOLL	11	0127	0127	0150D	N22	W15	.394	16123	9.9	23D	-F	2	C		28		F	
PURP	11	0130	0141	0200	N20	W15	.370	16123	9.9	30	1N		C					
VORO	11	0141E		0215	N23	W15	.406	16123	9.9	34D	-N		C	0142	179	2.0	EH	
GRP76055	11	0142+3	0148+0	0203	N27	E07	.407	16127	11.6	21	-F						F	
CULG	11	0142	0148	0203	N27	E08	.412	16127	11.7	21	-F		C	0148	120	1.3		
HOLL	11	0145	0148	0150D	N27	E06	.403	16127	11.5	5D	-N	2	C		54		F	
56 CULG	11	0325	0353U	0413	S21	W52	.836		7.2	48	-F		C	0353	20	.4	G	ZX
57 CULG	11	0357	0417	0502U	N24	E15	.419	16127	12.3	65D	-F		C	0417	70	.8	FL	ZX
58 ABST	11	0536	0540	0543D	N10	W44	.695	16122	7.9	7D	-F		P	0540	87	1.2	D	ZX
GRP76059	11	0628>9	0717	0845D	S26	E90	1.000	16137	18.0	137	1N						AFJK	
			0830															
ABST	11	0628	0717	0817D	S25	E90	1.000	16137	18.0	109D	1N		P	0717	87		AFJK	
CATA	11	0810	0830	0845D	S27	E90	1.000	16137	18.1	35D	1N	2	P	0830	73			
60 ZURI	11	0846	0848	0852	N10	E35	.577	16133	14.0	6	-N		C	0848	80	1.0		ZX
61 ZURI	11	0904	0904	0906	N10	E35	.577	16133	14.0	2	-N		C	0904	80	1.0		ZX
GRP76062	11	1028+2	1029+3	1036	N21	W21	.448	16123	9.9	8	-N						E	
MONT	11	1028	1029	1035	N22	W21	.458	16123	9.9	7	-N		C	1029	80		E	
KANZ	11	1028	1032	1032D	N21	W19	.425	16123	10.0	4D	-N	1						
ZURI	11	1030	1030	1036	N20	W21	.439	16123	9.9	6	1N		C	1030	310	3.5		
63 ZURI	11	1046	1048	1050	N12	E29	.497	16133	13.6	4	-F		C	1048	80	1.0		ZX
	11	1150	1153	NO FLARE PATROL														
	11	1156	1204	NO FLARE PATROL														
64 RAMY	11	1405	1425	1433	S27	E88	1.000	16137	18.2	28	-N	3	C					ZX
65 RAMY	11	1436	1438	1508	N11	W23	.405	16123	9.9	32	-N	3	C		23			ZX
66 KANZ	11	1449E	1452	1516	S28	E78	.989	16137	17.5	27D	-N	1						ZX
GRP76067	11	1516+0	1518+0	1530	N06	E09	.160	16130	12.3	14	-F						EG	
BIGB	11	1516	1518	1530	N06	E10	.177	16130	12.4	14	-N	2	C	1518	60	.7	G	
KANZ	11	1516	1518	1529	N06	E09	.160	16130	12.3	13	-F	2					EG	
68 KANZ	11	1539	1545	1554	S28	W13	.563	16125	10.7	15	-F	2						ZX
69 HOLL	11	1831	1833	1855	N29	W01	.424	16127	11.7	24	-N	3	C		75		F	ZX
GRP76070	11	2005+9	2014+1	2024	N21	W58	.855	16120	7.5	19	-N				25	.5		
BIGB	11	2005	2015	2026	N19	W60	.870	16120	7.3	21	-N	1	C	2015	30	.6		
HOLL	11	2014	2014	2021	N23	W57	.850	16120	7.6	7	-N	3	C		19			
71 BIGB	11	2015	2016	2019	N18	W30	.538	16123	9.6	4	-F	2	C	2016	210	2.5		ZX
72 BIGB	11	2146	2148	2152	S01	W86	.998	16115	5.5	6	-N	3	C	2148	60		A	ZX

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.	
GRP76073	11	2306+9	2314+3	2341	N12	W31	.526	16123	9.6	35	-N				110	1.3	FJ
CULG	11	2306U	2314	2316D	N13	W31	.529	16123	9.6	10D	-N		P	2314	120	1.4	J
BIGB	11	2309	2314	2348	N12	W31	.526	16123	9.6	39	-B	3	C	2314	130	1.6	
HOLL	11	2311	2317	2341	N12	W31	.526	16123	9.6	30	-B	2	C		98		F
PALE	11	2315	2315	2320	N12	W31	.526	16123	9.6	5	-N	3	C		33		F
74 HOLL	11	2354	2359	0008	N18	W47	.744	16121	8.5	14	-N	2	C		34		ZX
75 HOLL	11	2358	2400	0012	N07	W77	.973	16115	6.2	14	-B	2	C				F ZX
GRP76076	12	0021+1	0022+2 0032+1	0046	N20	W28	.524	16123	9.9	25	-B						FZ
HOLL	12	0021	0023	0106	N20	W28	.524	16123	9.9	45	-B	2	C		104		F
BIGB	12	0022	0024	0059E	N20	W28	.524	16123	9.9	37D	1B	3	C	0024	200	2.3	
PALE	12	0022	0022	0028	N21	W33	.592	16123	9.5	6	-B	3	C		43		F
MANI	12	0030E	0032	0035	N20	W26	.499	16123	10.1	5D	-B	3	V		100		Z
PALE	12	0031	0033	0035	N21	W33	.592	16123	9.5	4	-N	3	C		39		F
PURP	12	0034	0035	0045	N20	W27	.512	16123	10.0	11	1N		P				
77 HOLL	12	0022	0023	0120	N12	W31	.525	16123	9.7	58	-B	2	C		66		F ZX
78 HOLL	12	0119	0120	0130	N07	W78	.977	16115	6.2	11	-N	2	C				ZX
79 PALE	12	0142	0144	0151	N05	W77	.973	16115	6.3	9	-N	3	C				F ZX
80 PALE	12	0155	0156	0208	N06	W78	.977	16115	6.2	13	-N	3	C				F ZX
81 PURP	12 IMP.1 NO ! PALE	0256	0258	0304	N04	W81	.987	16115	6.0	8	?F		C				ZX
82 PALE	12	0330	0331	0339	N05	W80	.984	16115	6.1	9	-N	3	C		25		ZX
83 PALE	12	0406	0407	0412	S26	E78	.988	16137	18.0	6	-N	3	C				ZX
84 YUNN	12 IMP.1 NO ! TACH	0544	0546	0555	N09	W82	.989	16115	6.1	11	?N		C		113		ZX
85 ISTA	12	0710		0720	N07	W78	.977	16115	6.4	10	-N		V				D ZX
86 ISTA	12	0720		0722	N16	W31	.541	16123	10.0	2	-N		V				D ZX
87 BIGB	12	1445	1448	1454	N06	W87	.998	16115	6.1	9	-N	2	C	1448	30		A ZX
GRP76088	12	1612+1	1618+0	1635	S26	E68	.952	16137	17.8	23	-F				40		E
BIGB	12	1612	1618	1635	S25	E69	.956	16137	17.9	23	-F	2	C	1618	50		
MCMA	12	1613	1618	1629D	S28	E67	.958	16137	17.7	16D	-N		C	1618	30	.9	E
89 MCMA	12	1636		1639D	N23	W38	.660	16123	9.8	3D	-F		C	1639	30	.4	E ZX
90 MCMA	12	1745	1751	1758	S28	E65	.941	16137	17.6	13	-F		C	1751	30	.9	E ZX
91 MCMA	12	1752	1803	1837D	N23	W40	.683	16123	9.7	45D	-F		C	1803	30	.4	D ZX
92 BIGB	12	2106	2109	2120	N09	E14	.255	16133	13.9	14	-N	2	C	2109	180	1.9	ZX
GRP76093	13	0110+3	0116+2 0125	0137	S26	E61	.915	16137	17.6	27	1N						FU
CULG	13	0110	0125	0137	S28	E63	.931	16137	17.8	27	1F		C	0125	160		
HOLL	13	0113	0116	0136D	S25	E58	.894	16137	17.4	23D	-B	3	C		83		U F
MANI	13	0117E	0118	0122	S25	E60	.907	16137	17.6	5D	-N	3	V		80	1.3	
PALE	13	0118E	0118U	0140	S27	E65	.939	16137	17.9	22D	1B	3	C		147		F
94 CULG	13	0130	0137	0149	N22	W41	.689	16123	10.0	19	-F		C	0137	30	.4	ZX
GRP76095	13	0136>9	0142 0151	0154D	N12	E74	.959		18.6	18	-F						FS
CULG	13	0136	0142	0230	N12	E75	.964		18.7	54	-N		C	0142	100		S
PALE	13	0151	0151	0154	N13	E74	.959		18.6	3	-F	3	C				F
GRP76096	13	0315+8	0331+3 0355	0412	N12	E14	.275	16133	14.2	57	1N						FLSU
CULG	13	0315	0334	0550	N12	E13	.260	16133	14.1	155	1N		C	0334	440	4.5	SF
PALE	13	0322	0331	0412	N12	E14	.275	16133	14.2	50	-N	3	C		151		U F
TACH	13	0322		0338	N11	E11	.223	16133	14.0	8	1N		V	0322	442	4.6	FL
YUNN	13	0323	0325	0325D	N12	E14	.275	16133	14.2	2D	1N		C		193		
PURP	13	0344	0355	0410	N11	E14	.267	16133	14.2	26	1N		P				

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
97 CULG	13	0358	0405	0425	S28	E39	.759	16136	16.1	27	-F		C	0405	10	.2		ZX
98 CULG	13	0513	0530	0618	S33	E44	.827	16136	16.5	65	?N		C	0530	140	2.5	S	ZX
	IMP.1 NO : TACH			CATA														
99 MCMA	13	1327	1331	1354	S31	E55	.891	16137	17.7	27	-F		C	1331	20	.5	E	ZX
100 MCMA	13	1427E	1430	1452	N20	W51	.789	16123	9.8	250	-F		C	1430	60	1.0	E	ZX
GRP76101	13	1654	1714	1745	N20	W51	.789	16123	9.9	51	-N				25	.4	E	
			1731															
HOLL	13	1654	1731	1745	N20	W52	.799	16123	9.8	51	-B	3	C		24			
MCMA	13	1713E		1719D	N20	W51	.789	16123	9.9	6D	-F		P	1713	25	.4	E	
HOLL	13	1714	1714	1721	N19	W51	.787	16123	9.9	7	-B	3	C		20			
102 MCMA	13	1749E		1754D	N20	W51	.789	16123	9.9	5D	-F		P	1750	60	1.0	E	ZX
103 HUAN	13	1921	1925	1928	N08	W84	.994	16122	7.5	7	-F	1	C	1925	15		D	ZX
GRP76104	14	0313+3	0317+1	0327	S28	E44	.801	16137	17.4	14	-N				80	1.3		
CULG	14	0313	0318	0335D	S29	E44	.806	16137	17.4	22D	-N		P	0318	60	1.0		
PALE	14	0316	0317	0326	S28	E45	.809	16137	17.5	10	-N	2	C		84		FDE	
YUNN	14	0316	0318	0327	S28	E44	.801	16137	17.4	11	1N		C		193			
105 ABST	14	0535E	0541	0632	N24	W90	1.000	16120	7.5	57D	?N		P	0541	87		ADGJ	ZX
	IMP.1 NO : TACH																	
106 ABST	14	0556	0558	0603	N21	W55	.828	16123	10.1	7	-N		C	0558	87	1.7	DJ	ZX
107 ABST	14	0619	0627	0631	N31	W35	.675	16127	11.6	12	-F		C	0627	87	1.2	DJ	ZX
108 ABST	14	0626	0628	0635	S27	E48	.828	16137	17.9	9	-F		C	0628	87	1.5	DJ	ZX
109 ABST	14	0626	0631	0635	N21	W59	.863	16123	9.8	9	-N		C	0631	87	1.6	DJ	ZX
110 ISTA	14	0725		0743	N17	W56	.832	16123	10.1	18	-N		V				D	ZX
111 ABST	14	0834	0837	0848	N27	E66	.919	16139	19.3	14	-N		C	0837	87		DJ	ZX
112 ABST	14	0841	0844	0855	N19	W56	.834	16123	10.2	14	?N		C	0844	174	3.4	FJ	ZX
	IMP.1 NO : CATA			MONT														
113 ABST	14	0933	0937	0950	N19	W60	.869	16123	9.9	17	?N		C	0937	174	3.4	FJ	ZX
	IMP.1 NO : CATA			MONT														
114 ABST	14	0943	0944	0950	S27	E44	.796	16137	17.7	7	-N		C	0944	87	1.4	DV	ZX
115 HOLL	14	1349	1350	1356	S26	E40	.756	16137	17.6	7	-B	3	C		17		F	ZX
GRP76116	14	1526	1531	1643	N19	W63	.892	16123	9.9	77	-B						U	
			1542															
HOLL	14	1526	1531	1643	N19	W63	.892	16123	9.9	77	-N	3	C		50		U	
HOLL	14	1526	1542	1643	N19	W63	.892	16123	9.9	77	-B	3	C		39		U	
117 RAMY	14	1635	1637	1700	N27	E57	.856	16139	19.0	25	-N	3	C		15			ZX
GRP76118	14	1748>9	1754	1809	N17	W64	.898	16123	9.9	21	-N						F	
			1807															
RAMY	14	1748	1754	1805	N18	W65	.906	16123	9.9	17	-N	3	C		19			
PALE	14	1759	1807	1813	N17	W64	.898	16123	9.9	14	-N	3	C		66		F	
119 PALE	14	1833	1844	1846	N18	W65	.906	16123	9.9	13	-N	3	C		34		F H	ZX
GRP76120	14	1841+1	1843+0	1851	N28	E58	.865	16139	19.1	10	-N							
BIGB	14	1841	1843	1852	N28	E59	.873	16139	19.2	11	1N	3	C	1843	210	4.2		
PALE	14	1842	1843	1850	N29	E58	.867	16139	19.1	8	-N	3	C		74		FDE	
GRP76121	14	1846+4	1851+0	1936	N19	W65	.906	16123	9.9	50	-N				25		F	
			1930															
RAMY	14	1846	1851	1940	N18	W65	.906	16123	9.9	54	-N	3	C		19			
PALE	14	1850	1851	1856	N21	W65	.908	16123	9.9	6	-N	3	C		28		F	
PALE	14	1928	1930	1931	N18	W66	.913	16123	9.9	3	-N	3	C		21		F	
122 MCMA	14	1923E		1924D	N27	E58	.864	16139	19.2	1D	-N		P	1923	30	.6	E	ZX

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA .Sq. Deg.		
GRP76123	14	2113+2	2117+1	2124	N29	E56	.852	16139	19.1	11	-B				30	.6		
RAMY	14	2113	2118	2124	N29	E56	.852	16139	19.1	11	-B	3	C		30			
PALE	14	2115	2117	2123	N29	E57	.860	16139	19.2	8	-B	3	C		34		FDE	
GRP76124	14	2206+1	2210+4	2238	N18	W69	.932	16123	9.7	32	1N				160		U	
CULG	14	2153E	2211	2245	N18	W70	.938	16123	9.7	520	1N		C	2211	240		F	
HOLL	14	2206	2210	2238	N18	W71	.943	16123	9.6	32	1B	3	C		119		UDE	
PALE	14	2206	2214	2223	N18	W67	.919	16123	9.9	17	1N	3	C		209		FDE	
RAMY	14	2207	2208U	2208D	N17	W69	.932	16123	9.7	10	-N	2	C		17			
125 CULG	14	2242	2250U	2322	N27	E55	.840	16139	19.1	40	-F		C	2250	40	.8	T	ZX
GRP76126	14	2312	2320+5	0034	S30	E37	.757	16137	17.7	82	1F						EHL	
CULG	14	2312	2320	0034	S33	E37	.778	16137	17.7	82	1N		C	2320	260	4.0	LM	
VORO	14	2320E		2338D	S31	E35	.749	16137	17.6	180	1F		P	2327	188	2.8	E	
MANI	14	2320E	2325U	2335D	S29	E37	.758	16137	17.7	150	-N	2	C		180			
MANI	14	2320E	2325U	2335D	S29	E37	.758	16137	17.7	150	-F	2	V		180	1.4		
127 CULG	14	2336	2345	0012	N20	W68	.927	16123	9.9	36	?F		C	2345	180			ZX
	IMP.1 NO ; BIGB HOLL																	
128 CULG	14	2338	2343U	2354	N30	E55	.847	16139	19.1	16	-F		C	2343	20	.4		ZX
GRP76129	15	0058	0122+3	0154	N19	W70	.938	16123	9.8	56	-N						K	
CULG	15	0058	0125	0154	N20	W70	.938	16123	9.8	56	1F		P	0125	170		KT	
PALE	15	0122E	0122U	0130D	N18	W70	.938	16123	9.8	80	-N	3	C		44		DE	
130 CULG	15	0119	0123	0132	N26	W44	.735	16127	11.8	13	-F		C	0123	50	.8	T	ZX
131 CULG	15	0248	0302U	0337	N11	W14	.265	16133	14.1	49	-N		C	0302	100	1.1	S	ZX
132 ABST	15	0528	0531	0554	S28	E34	.719	16137	17.8	26	-F		P	0531	131	1.9	EJ	ZX
GRP76133	15	0609E	0609	0623	N25	W46	.752	16127	11.8	14	-N						DJ	
ABST	15	0609E	0609	0625	N25	W46	.752	16127	11.8	160	-N		P	0609	87	1.4	DJ	
CATA	15	0610E	0610	0620	N25	W46	.752	16127	11.8	100	-N	2	P	0610	28	.4		
134 ABST	15	0609E	0612	0630	N17	W80	.982	16123	9.3	210	?N		P	0612	131		DJ	ZX
	IMP.1 NO ; CATA																	
GRP76135	15	0644+6	0649 0655+4	0715	N18	W73	.954	16123	9.8	31	1N				160		FJ	
ABST	15	0644	0649	0652D	N17	W76	.968	16123	9.6	80	1N		P	0649	174		FJ	
CATA	15	0650	0655	0710	N17	W73	.954	16123	9.8	20	1N	2	C	0655	168			
WEND	15	0652E		0720D	N19	W72	.949	16123	9.9	280	1N		C	0654	150		F	
ATHN	15	0654E	0659	0708	N20	W70	.938	16123	10.0	140	-N	1		0659	49	1.3		
KANZ	15	0718E		0750	N19	W75	.963	16123	9.7	320	-F	2						
GRP76136	15	0745+1	0747 0754	0817	S29	E32	.711	16137	17.7	32	-F						DJK	
ABST	15	0745	0747	0755D	S29	E35	.735	16137	17.9	100	-N		P	0747	87	1.3	DJK	
KANZ	15	0746	0754	0817	S30	E29	.696	16137	17.5	31	-F	2						
137 ABST	15	0832	0833	0836	N26	W37	.663	16127	12.6	4	-N		C	0833	87	1.2	DV	ZX
138 ABST	15	0848	0849	0915	N37	W36	.724		12.7	27	-N		C	0849	87	1.3	DGV	ZX
GRP76139	15	0848+9	0849 0857+3	0908	N31	W23	.584		13.6	20	-F						GV	
ABST	15	0848	0849	0853	N33	W23	.585		13.6	5	-N		C	0849	87	1.2	DGV	
CATA	15	0850	0900	0940	N30	W23	.554		13.6	50	-F	1	C	0900	56	.6		
KANZ	15	0857	0857	0908	N31	W21	.548		13.8	11	-F	2					E	
GRP76140	15	1001+3	1006	1014	N27	E50	.796	16139	19.2	13	-N						J	
ABST	15	1001	1006	1014	N27	E50	.796	16139	19.2	13	-N		C	1006	87	1.5	DJ	
KANZ	15	1004		1008D	N27	E51	.805	16139	19.2	40	-N	2					E	
141 BIGB	15	1701E	1710	1715	N17	W79	.979	16123	9.8	140	-N	3	C	1710	30		K	ZX
142 BIGB	15	1722	1723	1735	N13	W85	.995	16123	9.3	13	-N	3	C	1723	30		A	ZX
GRP76143	15	1736+8	1738 1745+1	1755	N17	W79	.979	16123	9.8	19	-B						DK	
BIGB	15	1736	1738	1741	N16	W79	.979	16123	9.8	5	-N	3	C	1738	40		K	
HCMA	15	1737E	1745	1855	N18	W83	.990	16123	9.5	780	-B		C	1745			D	
RAMY	15	1744	1745	1753	N17	W74	.959	16123	10.2	9	-B	3	C					
BIGB	15	1744	1746	1755	N16	W79	.979	16123	9.8	11	-N	3	C	1746	40		K	

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg.		
144 BIGS	15	1830	1832	1847	N14	W80	.982	16123	9.8	17	-N	3	C	1832	30			ZX
145 BIGS	15	1947	1948	1953	N27	E49	.787	16139	19.5	6	-F	3	C	1948	30	.5		ZX
146 MCMA	15	1955E		20030	N18	W83	.990	16123	9.6	80	-F		C	1956			C	ZX
GRP76147	15	2023	2031	2042	N19	W80	.982	16123	9.4	19	-N						D	
MCMA	15	2023	2031	2045	N21	W85	.994	16123	9.5	22	-N		C	2031			D	
PAMY	15	2035E	2035U	2038	N18	W76	.968	16123	10.2	30	-N	2	C		22			
GRP76148	15	2200+0	2201+0	2204	S28	E18	.597	16137	17.3	4	-N				60	.7	D	
CULG	15	2200	2201	2204	S29	E18	.609	16137	17.3	4	-N		C	2201	60	.6		
VORO	15	2200	2201	2204	S28	E19	.604	16137	17.3	4	-N		C	2201	63	.7	D	
GRP76149	15	2205+3	2210	2212	N20	W81	.985	16123	9.8	7	-F						DJ	
CULG	15	2205	2209U	22090	N21	W83	.990	16123	9.7	40	-F		P	2209	10			
VORO	15	2208	2210	2212	N20	W80	.982	16123	9.9	4	-F		C	2210	36		DJ	
GRP76150	15	2243	2251	2318	N17	W85	.994	16123	9.6	35	1N				90		DHK	
CULG	15	2243	2251	2334	N17	W85	.994	16123	9.6	51	1N		C	2251	70		K	
VORO	15	2249E		2301	N17	W85	.994	16123	9.6	120	1F		C	2250	116		CH	
VORO	15	2304E		2316	N17	W85	.994	16123	9.6	140	-N		P	2304	27		CCH	
151 CULG	15	2305	2308	2320	N27	E48	.778	16139	19.6	15	-F		C	2308	30	.5	HT	ZX
GRP76152	15	2316	2322+5	0005	S28	E35	.728	16144	18.6	49	-9						UZ	
HOLL	15	2316	2327	0005	S26	E35	.728	16144	18.6	49	1B	3	C		199		Z U	
PALE	15	2317E	2322U	23300	S29	E36	.743	16144	18.7	130	-N	3	C		71		FDE	
153 CULG	15	2356	2357	0006	N24	W49	.778	16127	12.3	10	-F		C	2357	10	.2		ZX
GRP76154	16	0000+2	0003+0	0005	S28	E17	.592	16137	17.3	5	-F				35	.4	DH	
CULG	16	0000	0003	0005	S29	E17	.604	16137	17.3	5	-N		C	0003	20	.3		
VORO	16	0002	0003	0005	S28	E18	.598	16137	17.4	3	-F		C	0003	54	.6	DH	
GRP76155	16	0038+1	0040+1	0050	N18	W85	.994	16123	9.7	12	1N				130		EH	
CULG	16	0038	0041	0114	N18	W85	.994	16123	9.7	36	1B		C	0041	130		H	
VORO	16	0039	0041	0047	N18	W85	.994	16123	9.7	8	1N		C	0041	134		EH	
MANI	16	0040E	0040U	00500	N16	W89	.999	16123	9.4	100	-N	3	V					
156 CULG	16	0042	0048	0114	N22	W02	.304		15.9	32	-F		C	0048	60	.6	GH	ZX
157 CULG	16	0348E	0354	0451	N12	W28	.480	16133	14.1	630	-N		C	0354	140	1.6	CSU	ZX
GRP76158	16	0525+2	0536+7	0552	N19	W84	.998	16123	9.6	27	1B				180		AEJ	
ABST	16	0525	0536	0551	N20	W90	1.000	16123	9.5	26	1N		C	0536	175		AEJ	
CULG	16	0527	0540	0552	N18	W87	.997	16123	9.7	25	1B		C	0540	80			
ABST	16	0536	0543	0549	N22	W88	.998	16123	9.6	13	1B		C	0543	175		ADJ	
GRP76159	16	0705>9	0727+4	0733	N18	W88	.998	16123	9.7	28	1N						ADJ	
ABST	16	0705	0727	0748	N18	W88	.998	16123	9.7	43	2N		C	0727	349		ADJ	
YUNN	16	0729	0731	0733	N19	W84	.992	16123	10.0	4	1B		C		129			
MONT	16	0730E	0730	0732	N18	W90	1.000	16123	9.6	20	-F		C	0730	50			
GRP76160	16	0809+6	0814+1	0829	N19	W85	.994	16123	10.0	20	1N						ADJ	
ABST	16	0809	0814	0828	N20	W80	.982	16123	10.3	19	1N		C	0814	175		ADJ	
CATA	16	0815	0815	0830	N19	W90	1.000	16123	9.6	15	1N	2	C	0815	67			
161 ABST	16	0914	0915	0917	N30	E31	.628	16139	18.7	3	-F		C	0915	87	1.1	DJV	ZX
162 ZURI	16	1024	1026	1050	N17	E48	.751	16147	20.3	26	-N		C	1026	40	.6		ZX
GRP76163	16	1350+0	1351+1	1355	N28	E28	.582	16139	18.7	5	-F						E	
ZURI	16	1350E	1352	1354	N28	E28	.582	16139	18.7	40	-N		P	1352	90	1.2		
MCMA	16	1350	1351	1356	N28	E28	.582	16139	18.7	6	-F		C	1351	25	.3	E	
164 ZURI	16	1434	1438	1440	N09	W42	.668	16133	13.5	6	-F		C	1438	50	.7		ZX
165 HUAN	16	1917	1918	1919	N28	E27	.572	16139	18.8	2	-F	1	C	1918	15	.2	C	ZX
GRP76166	16	2045		2055	S30	E01	.565	16136	16.9	10	-F							
HUAN	16	2045		2052	S30	E03	.567	16136	17.1	7	-F	1	P				D	
MCMA	16	2049E		20580	S30	E00	.565	16136	16.9	90	-F		P	2055	60	.7	E	
167 VORO	16	2132	2133	2137	N12	W45	.709	16133	13.5	5	-F		C	2133	18	.2	D	ZX

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
GRP76168	16	2137+0	2138+2	2146	N27	E34	.636	16139	19.5	9	-N				60	.8	DH	
BIGB	16	2137	2140	2146	N27	E35	.647	16139	19.5	9	-N	3	C	2140	50	.6		
VORO	16	2137	2139	2145	N28	E33	.633	16139	19.4	8	-N		C	2138	72	.9	DH	
169 VORO	17	0237	0239	0248	N25	E31	.590	16139	19.4	3	-F		C	0238	54	.7	D	ZX
	17	0252	0304	NO FLARE PATROL														
170 CULG	17	0314E	0316	0336U	N21	E1E	.385		18.3	220	-N		P	0316	90	1.0	CGL	ZX
171 ABST	17	0509	0510	0512	N11	W49	.754	16133	13.5	3	-F		C	0510	87	1.3	DV	ZX
172 ABST	17	0615	0625	0636	N12	W64	.896		12.5	21	-F		C	0625	87		DJ	ZX
GRP76173	17	0629+6	0634+6	0643	N10	E90	1.000	16153	24.0	14	-N						ADJ	
ABST	17	0629	0634	0639D	N10	E90	1.000	16153	24.0	100	1N		P	0634	140		ADJ	
ISTA	17	0632E		0640	N12	E90	1.000	16153	24.0	80	-B		V				A	
CATA	17	0635	0640	0645	N09	E90	1.000	16153	24.0	10	-F	1	C	0640	28			
GRP76174	17	0652	0658	0706	N14	W47	.734	16133	13.8	14	-F						DJ	
ABST	17	0652	0658	0709	N16	W48	.745	16133	13.7	17	-N		C	0658	87	1.3	DJ	
ISTA	17	0655E		0702	N12	W46	.720	16133	13.8	70	-F		V				D	
GRP76175	17	0720E		0745	N10	W50	.764	16133	13.6	25	-N							
ISTA	17	0720E		0740	N09	W50	.764	16133	13.6	200	-N		V				D	
ISTA	17	0735		0745	N11	W50	.765	16133	13.6	10	-N		V				D	
176 RAMY	17	1126	1127	1152	S25	W54	.867	16150	13.4	26	-N	3	C		18			ZX
	17	1837	1839	NO FLARE PATROL														
177 HUAN	17	1903		1916D	N11	W58	.846	16133	13.4	13D	-F	1	P	1911	20	.3	D	ZX
GRP76178	17	1913+0	1917	1945	S08	E42	.691	16148	21.0	32	-F				45	.6	E	
PALE	17	1913	1917	1945	S10	E43	.710	16148	21.0	32	-N	1	C		30			
HUAN	17	1913		1916	S08	E41	.679	16148	20.9	3	-F	1	P	1915	55	.7	E	
MCMA	17	1930E		1947D	S08	E42	.691	16148	21.0	17D	-F		C	1930	40	.6	E	
	17	2246	2249	NO FLARE PATROL														
	17	2253	2301	NO FLARE PATROL														
	17	2324	2329	NO FLARE PATROL														
179 PURP	18	0001E	0001	0001D	S29	W07	.563	16137	17.5		?N		P					ZX
	IMP.1 NO ! HOLL																	
GRP76180	18	0145+2	0148 0206	0240	S28	W12	.568	16137	17.2	55	-N						FS	
CULG	18	0145E	0206	0245D	S28	W17	.595	16137	16.8	60D	-N		P	0206	130	1.6	CSF	
PURP	18	0147	0148	0234	S29	W07	.563	16137	17.5	47	1N		P					
181 CULG	18	0230	0231	0239	N14	W58	.847	16133	13.8	9	-F		C	0231	20	.4		ZX
182 ABST	18	0515	0516	0524	N32	E54	.842	16156	22.3	9	-F		C	0516	52	1.0	DV	ZX
183 HTPR	18	0542	0545	0550	S28	W07	.549	16137	17.7	8	-F		C	0545	30	.3	E	ZX
184 CULG	18	0623E		0623D	N08	E85	.995	16153	24.6		?F		P	0623	80			ZX
	IMP.1 NO ! ABST HTPR KIEV CATA																	
GRP76185	18	0721+0	0723+0	0726	S20	W42	.744	16154	15.2	5	-F						D	
PURP	18	0721	0723	0725	S20	W44	.763	16154	15.0	4	1F		P					
HTPR	18	0721	0723	0726	S18	W42	.733	16154	15.2	5	-F		C	0723	10	.1		
ISTA	18	0721		0728	S21	W40	.729	16154	15.3	7	-N		V				D	
GRP76186	18	0737+5	0743+2	0802	S07	E35	.599	16148	20.9	25	-N						J	
HTPR	18	0737	0743	0800	S08	E33	.577	16148	20.8	23	-F		C	0743	70	.8	E	
ABST	18	0739	0744	0803	S07	E35	.599	16148	20.9	24	-N		C	0744	140	1.8	DJ	
ZURI	18	0739	0743	0819	S07	E34	.586	16148	20.9	40	-N		C	0743	70	.9		
MONT	18	0740	0744	0805	S06	E36	.608	16148	21.0	25	-N		C	0744	100			
CATA	18	0740	0745	0800D	S06	E35	.572	16148	20.9	20D	1N	2	P	0745	168	2.1		
ISTA	18	0742		0758	S07	E37	.625	16148	21.1	16	1N		V				EF	
ATHN	18	0742	0744	0801	S09	E50	.784	16148	22.1	19	-N	1		0744	49	.8		
187 ISTA	18	0810		0814	S03	E46	.726	16148	21.8	4	-F		V				E	ZX
188 ABST	18	0828	0828	0832	S30	W07	.577	16137	17.8	4	-F		P	0828	87	1.1	D	ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill of Disc	CORR AREA Sq Deg		
189 ZURI	18	0831	0841	0851	S22	W68	.949	16150	13.3	20	-F		C	0841	40			ZX
190 ZURI	18	0855	0859	0901D	S28	W09	.555	16137	17.7	60	-F		P	0859	70	.9		ZX
191 ASST	18	0907	0908	0913	S27	W09	.541	16137	17.7	6	-F		C	0908	87	1.1	DV	ZX
GRP76192	18	1011+7	1013+7	1022	S29	W08	.566	16137	17.8	11	-F						E	
HTPR	18	1011	1013	1022	S28	W10	.559	16137	17.7	11	-F		C	1013	20	.2	E	
MONT	18	1018	1020	1021	S29	W08	.566	16137	17.8	3	-F		C	1020	60		E	
KANZ	18	1018	1018	1022	S29	W08	.566	16137	17.8	4	-F	1						
193 KANZ	18	1203	1203	1218	N29	E48	.783	16156	22.1	15	-F	2						ZX
194 HTPR	18	1239	1240	1244	N27	E15	.448	16139	19.7	5	-F		C	1240	10	.1		ZX
195 ZURI	18	1443	1449	1451D	N28	W27	.570	16160	16.6	80	-F		P	1449	50	.6		ZX
GRP76196	18	1717+2	1719+1	1740	N28	W28	.580	16160	16.6	23	-F				35	.4	EG	
BIGB	18	1717	1720	1739	N27	W28	.572	16160	16.6	22	-F	3	C	1720	40	.5	G	
KANZ	18	1719	1719	1734D	N28	W28	.580	16160	16.6	150	-F	2					G	
HTPR	18	1720E		1740	N28	W28	.580	16160	16.6	200	-F		C	1721	30	.3	E	
GRP76197	18	1815+0	1816+0	1825	N21	W04	.290		18.5	10	-N				30	.3	DG	
MCMA	18	1815	1816	1818D	N22	W04	.306		18.5	30	-N		C	1816	30	.3	D	
BIGB	18	1815	1816	1825	N21	W05	.294		18.4	10	-N	3	C	1816	30	.3	G	
198 BIGB	18	1902	1906	1927	S14	W90	1.000	16157	12.0	25	-N	3	P	1906	60			ZX
199 VORO	18	2247	2252	2308	N12	W64	.896	16133	14.1	21	-B		C	2252	45	.5	E	ZX
200 CULG	19	0135	0139	0157	S32	W19	.655	16137	17.6	22	-F		C	0139	30	.4		ZX
GRP76201	19	0226+2	0230+0	0235	S29	W20	.626	16137	17.6	9	-F				40	.5	E	
CULG	19	0226	0230	0235	S28	W21	.622	16137	17.5	9	-F		C	0230	30	.4		
VORO	19	0228	0230	0235	S30	W19	.632	16137	17.7	7	-N		C	0230	45	.5	E	
202 VORO	19	0241	0243	0251	S19	W53	.841	16154	15.1	10	-N		C	0243	63	1.1	G	ZX
GRP76203	19	0710E	0720+3	0736	S02	E35	.582	16148	21.9	26	-N				25	.3	E	
ISTA	19	0710E	0723	0736	S02	E37	.610	16148	22.1	26D	-B		V				E	
KANZ	19	0711E	0720	0738	S03	E34	.571	16148	21.8	27D	-N	2						
MANI	19	0723E	0723U	0735D	S04	E35	.588	16148	21.9	12D	-N	3	V		30			
HTPR	19	0724E		0734	S02	E36	.596	16148	22.0	10D	-F		C	0724	20	.2		
GRP76204	19	0810+2	0811+1	0816	S27	W23	.625	16137	17.6	6	-N						E	
HTPR	19	0810	0811	0815	S27	W23	.625	16137	17.6	5	-F		C	0811	20	.2		
ISTA	19	0810		0816	S28	W23	.636	16137	17.6	6	-B		V				E	
KANZ	19	0812	0812	0816	S27	W25	.641	16137	17.5	4	-N	1						
205 KANZ	19	0840	0847	0903	S04	E33	.561	16148	21.8	23	-F	2						ZX
206 MONT	19	0841	0846	0849	N28	W49	.788	16132	15.7	8	-N		C	0846	110			ZX
GRP76207	19	0910+0	0912+3	0917	S32	W20	.660	16137	17.9	7	-F				45	.6	E	
CATA	19	0910E	0915	0920D	S32	W21	.666	16137	17.8	10D	-F	1	P	0915	56	.7		
HTPR	19	0910	0912	0914	S32	W20	.660	16137	17.9	4	-F		C	0912	30	.3	E	
GRP76208	19	0918+0	0921	0940	S03	E34	.571	16148	21.9	22	-F						E	
			0930															
HTPR	19	0918	0930	0942	S02	E35	.582	16148	22.0	24	-F		C	0930	20	.2	E	
KANZ	19	0918	0921	0937	S04	E33	.561	16148	21.9	19	-N	2						
GRP76209	19	0940+1	0941+4	0948	S26	W25	.631	16137	17.5	8	-F				50	.6		
HTPR	19	0940	0945	0949	S27	W24	.633	16137	17.6	9	-F		C	0945	20	.2		
MONT	19	0940	0942	0947	S26	W25	.631	16137	17.5	7	-F		C	0942	50			
KANZ	19	0941	0945	0949	S26	W25	.631	16137	17.5	8	-F	1						
ZURI	19	0941E	0941	0947	S27	W25	.641	16137	17.5	60	-N		P	0941	80	1.1		
210 ZURI	19	1009	1009	1013	S03	E33	.557	16148	21.9	4	-F		C	1009	70	.9		ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT DATE	START	MAX. PHASE	END	LOCATION APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	DURATION MIN.	IMPORTANCE	OBS. CONG	OBS. TYPE	MEASUREMENTS TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.	REMARKS	
GRP76211	19	1054+1	1055+4	1107	S03	E33	.457	16148	21.9	13	-B						HJR	
TELV	19	1054	1056	1112	S07	E33	.573	16148	21.9	18	-B		C	1056	80	.9		
KANZ	19	1055	1059	1107	S03	E33	.557	16148	21.9	12	-B	3					H	
CATA	19	1055	1059	1110	S02	E33	.545	16148	21.9	15	1B	2	C	1055	196	2.4		
HTPR	19	1055		10580	S03	E33	.557	16148	21.9	30	-B		C	1056	120	1.4	E	
ZURI	19	1055	1055	1103	S03	E33	.557	16148	21.9	8	-B		C	1055	80	1.0		
MONT	19	1055	1056	1106	S03	E34	.571	16148	22.0	11	1B		C	1056	250		H	
ATHN	19	1056E	1056U	11000	S03	E32	.543	16148	21.9	40	-B	4	C		143		FDE	
ABST	19	1057E	1058	1104	S03	E34	.571	16148	22.0	70	-N		P	1058	131	1.6	BDJ	
212 ABST	19	1103	1115	1130	N14	W26	.459	16161	17.5	27	-F		P	1115	87	1.0	D	ZX
213 ABST	19	1112E	1113	1117	N29	E01	.412	16139	19.5	50	-F		P	1113	87	1.0	D	ZX
214 KANZ	19	1225	1225	1237	S29	W21	.633	16137	17.9	12	-F	1						ZX
215 ZURI	19	1239	1239	1243	N09	E56	.826	16153	23.7	4	-F		C	1239	50	.9		ZX
GRP76216	19	1331+3	1333+2	1347	S02	E17	.313	16148	20.8	16	-N				60	.6	D	
LVOV	19	1331	1334	1341	S03	E18	.335	16148	20.9	10	-F		C	1334	150	1.6	D	
MCMA	19	1332	1336	1346	S02	E17	.313	16148	20.8	16	-N		C	1335	40	.4	D	
ZURI	19	1333	1333	13450	S02	E17	.313	16148	20.8	120	-N		P	1333	60	.7		
KANZ	19	1334	1334	1353	S02	E17	.313	16148	20.8	19	-B	2						
	19	1503	1514	NO FLARE PATROL														
217 MCMA	19	1540E	1541	1548	S03	E29	.500	16148	21.8	80	-N		C	1541	100	1.2	E	ZX
218 MCMA	19	1556	1559	16010	S03	E29	.500	16148	21.8	50	-B		C	1558	30	.4	EH	ZX
GRP76219	19	1703+1	1704+4	1714	S03	E28	.485	16148	21.8	11	-N				90	1.0	EH	
BIGS	19	1703	1704	1715	S01	E29	.493	16148	21.9	12	-N	3	C	1704	30	.4	E	
HUAN	19	1704	1706	1714	S03	E28	.485	16148	21.8	10	-N	2	C	1706	80	.9		
MCMA	19	1704E		1705C	S03	E29	.500	16148	21.9	10	-N		P	1704	100	1.2	EH	
PALE	19	1705E	1707	1713	S03	E27	.478	16148	21.7	80	-B	3	C		96		F	
GRP76220	19	1808+0	1809+3	1819	S03	E29	.500	16148	21.9	11	-N				48	.5	EH	
HUAN	19	1808	1812	1820	S03	E29	.500	16148	21.9	12	-N	1	C	1812	35	.4		
PALE	19	1808	1809	1818	S02	E29	.496	16148	21.9	10	-B	3	C		38		DE H	
MCMA	19	1815E		1815C	S03	E28	.485	16148	21.9		-N		P	1815	40	.5	E	
221 HUAN	19	1918	1921	1922	N12	E58	.846	16153	24.2	4	-F	1	C	1921	20	.3	D	ZX
GRP76222	19	1922+1	1930	1933	S03	E27	.470	16148	21.8	11	-N				45	.5	H	
HUAN	19	1922		19300	S03	E27	.470	16148	21.8	80	-N	1	P	1924	35	.4		
PALE	19	1923	1930	1933	S03	E27	.470	16148	21.8	10	-B	3	C		59		F	
MCMA	19	1926E		1930C	S03	E27	.470	16148	21.8	40	-N		P	1930	30	.3	EH	
223 HUAN	19	1946		19540	N28	W42	.722	16160	16.7	80	-N	1	P	1948	20	.2	D	ZX
	19	2010	2012	NO FLARE PATROL														
	19	2015	2027	NO FLARE PATROL														
	19	2038	2048	NO FLARE PATROL														
	19	2057	2113	NO FLARE PATROL														
224 PALE	19	2129	2129	21430	N14	W27	.472	16161	17.9	140	-N	3	C		22			ZX
	19	2130	2149	NO FLARE PATROL														
225 CULG	19	2204	2207	2216	S03	E25	.448	16148	21.8	12	-N		C	2207	140	1.6	H	ZX
	19	2226	2230	NO FLARE PATROL														
226 PALE	19	2248E	2256U	23130	S04	E18	.342	16148	21.3	250	-N	3	C		38		DE H	ZX
227 PURP	20	0106E	0108	0150	S20	W03	.422	16155	19.8	440	?N		P					ZX
	IMP.1 NO 1 PALE																	
GRP76228	20	0143	0148	0221	S05	E23	.422	16148	21.8	38	-B						HK	
CULG	20	0143	0148	0217	S03	E24	.426	16148	21.9	34	-N		C	0148	120	1.3	KH	
PURP	20	0151F	0151	0225	S07	E22	.421	16148	21.7	340	1B		P				H	
229 CULG	20	0224	0226	0230	S30	W32	.724	16137	17.7	6	-F		C	0226	30	.5		ZX
230 CULG	20	0328	0334U	0436	S29	W45	.818	16136	16.8	68	?N		P	0334	350	5.4	SVF	ZX
	IMP.2 NO 1 PALE																	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
231 CULG	20	0352E	0352E	0436	S28	E35	.732		22.8	44D	-F		P	0352	40	.6	GL	ZX
232 CULG	20	0352	0355	0434	N12	W28	.479	16161	18.1	42	-F		C	0355	40	.6	G	ZX
233 CULG	20	0407E	0409U	0410D	S03	E24	.426	16148	22.0	3D	-F		C	0409	40	.4	C	ZX
GRP76234	20	0455+4	0459+1	0510	N34	W15	.535	16139	19.1	15	-N				110	1.3	DHV	
CULG	20	0455	0459	0516	N34	W14	.530	16139	19.2	21	-N		C	0459	140	1.6	H	
ABST	20	0459	0500	0503	N34	W16	.541	16139	19.0	4	-N		C	0500	87	1.0	DV	
235 ABST	20	0459	0500	0515	N13	W33	.553	16161	17.7	16	-F		C	0500	87	1.0	DV	ZX
236 CULG	20	0512E	0513	0521D	S21	W36	.691	16137	17.5	9D	-N		P	0513	120	1.9	C	ZX
237 ABST	20	0521	0523	0535	N11	W31	.520	16161	17.9	14	-F		C	0523	87	1.0	C	ZX
GRP76238	20	0521+3	0528 0544	0559	S20	00	.419	16155	20.2	38	-F						F	
CULG	20	0521	0544	0551	S20	E00	.419	16155	20.2	30	-F	*	C	0544	70	.8		
ABST	20	0524	0528	0606	S20	E01	.419	16155	20.3	42	-N	*	C	0528	131	1.5	F	
239 ABST	20	0527	0528	0546	N29	W44	.745	16160	16.9	19	-N		C	0528	87	1.3	DJK	ZX
GRP76240	20	0537+5	0537 0543+1	0553	S04	E22	.401	16148	21.9	16	-N						DH	
CULG	20	0537E	0537	0553	S03	E23	.411	16148	22.0	16D	-N		C	0537	110	1.2	H	
ABST	20	0540	0544	0550	S04	E22	.401	16148	21.9	10	-N		C	0544	87	1.0	D	
PURP	20	0542	0543	0553	S07	E20	.394	16148	21.7	11	1N		C					
241 CULG	20	0613	0616	0618D	S03	E20	.366	16148	21.8	5D	-F		C	0616	20	.2		ZX
242 ABST	20	0725	0727	0741	N27	W15	.445	16139	19.2	16	-N		C	0727	87	1.0	D	ZX
243 ABST	20	0749	0806	0822	N14	W35	.583	16161	17.7	33	-N		C	0806	87	1.1	DK	ZX
GRP76244	20	0834+7	0848+6 0927	0931D	N28	W48	.778	16160	16.8	57	-N						EGJO	
KHAR	20	0834E	0848	1005D	N26	W49	.781	16160	16.7	91D	1N		P	0856	200	3.3	EGO	
ABST	20	0841	0854	0930	N31	W47	.780	16160	16.8	49	-N		C	0854	87	1.4	D	
ABST	20	0920	0927	0931	N28	W48	.778	16160	16.8	11	-N		C	0927	114	1.8	DJ	
GRP76245	20	0922+5	0925+2	0935	N12	E47	.721	16153	23.9	13	-N				70	1.0	E	
TELV	20	0922	0927	0937	N12	E47	.738	16153	23.9	15	-N		C	0927	80	1.2		
CATA	20	0925E	0925	0935	N11	E44	.694	16153	23.7	10D	-N	2	P	0925	56	.8		
KHAR	20	0927	0927	0935	N13	E47	.732	16153	23.9	8	-F		P	0927			E	
GRP76246	20	0930+7	0935+6	0952	S03	E20	.366	16148	21.9	22	-N				130	1.4	EHJ	
TELV	20	0930	0938	0951	S05	E20	.379	16148	21.9	21	-N		C	0938	50	.5		
ABST	20	0934	0941	0947	S03	E19	.350	16148	21.8	13	-N		P	0941	122	1.3	EJ	
LOCA	20	0935E	0935	1005	S03	E20	.366	16148	21.9	30D	1N		V	0935	234	2.6	H	
KHAR	20	0937	0938	0952	S01	E20	.355	16148	21.9	15	-N		P	0938	150	1.9	E	
GRP76247	20	1052+3	1056+4	1104	N07	E44	.692	16153	23.8	12	-N				70	1.0		
TELV	20	1052	1056	1103	N04	E44	.693	16153	23.8	11	-N		C	1056	80	1.1		
CATA	20	1055	1100	1105	N11	E44	.694	16153	23.8	10	-N	2	C	1100	56	.8		
	20	1150	1200	NO FLARE PATROL														
248 RAMY	20	1250E	1305U	1313D	N13	W40	.647	16161	17.5	23D	-N	2	C		81			ZX
249 RAMY	20	1305E	1311U	1313D	N27	W49	.784	16160	16.9	8D	-N	2	C		113			ZX
GRP76250	20	1321E	1343	1451D	N28	W50	.796	16160	16.8	90	-N						E	
ZURI	20	1321E	1343	1451D	N29	W50	.800	16160	16.8	90D	1N		P	1343	190	3.2		
HUAN	20	1336E		1406D	N28	W50	.796	16160	16.8	30D	-F	1	P	1340	55	.9	E	
251 ZURI	20	1359	1403	1415	N14	W39	.636	16161	17.7	16	-N		C	1403	120	1.6		ZX
GRP76252	20	1405+0	1409	1415	S03	E16	.305	16148	21.8	10	-N				60	.6	E	
ZURI	20	1405	1409	1415	S03	E16	.305	16148	21.8	10	-N		C	1409	90	1.0		
HUAN	20	1405		1406D	S04	E16	.313	16148	21.8	1D	-N	1	P	1405	40	.4	E	
	20	1458	1521	NO FLARE PATROL														
	20	1533	1554	NO FLARE PATROL														
253 HUAN	20	1559		1612	N09	E52	.785	16153	24.6	13	-F	1	C	1607	35	.5	E	ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg.		
254 PALE	20	1645	1650	1705	N27	W52	.811	16160	16.8	20	-N	3	C		67		F	ZX
255 PALE	20	1658	1658	1703	N13	W40	.647	16161	17.7	5	-N	3	C		24		F	ZX
GRP76256	20	1715	1716	1725D	N14	W39	.636	16161	17.8	10	-N							
PALE	20	1715	1716	1725	N14	W38	.623	16161	17.9	10	-N	3	C		43		F	
MCMA	20	1716E		1759D	N15	W41	.664	16161	17.6	430	-N		P	1716	125	1.7	E	
GRP76257	20	1826	1827	1836	N29	W53	.825	16160	16.8	10	-N				35	.6		
PALE	20	1826	1827	1836	N28	W53	.823	16160	16.8	10	-B	3	C		34		F	
MCMA	20	1827E		1835	N30	W53	.828	16160	16.8	80	-N		P	1827	35	.7	E	
GRP76258	20	1931	1940	1955	N14	W40	.649	16161	17.8	24	-N							
PALE	20	1931	1940	1954	N14	W39	.636	16161	17.9	23	-N	3	C		34		F	
MCMA	20	1949E		1955D	N15	W42	.676	16161	17.7	60	-F		C	1949	40	.6	E	
GRP76259	20	1931	1947	2004	N28	W53	.823	16160	16.8	33	1B						E	
PALE	20	1931	1947	2004	N26	W53	.818	16160	16.8	33	1B	3	C		135		FDE	
PALE	20	1931	1947	1948	N28	W54	.831	16160	16.8	17	1B	3	C		135		F	
MCMA	20	1949E		1955D	N30	W53	.828	16160	16.9	60	-B		C	1949	30	.6	E	
	20	2026	2039	NO FLARE PATROL														
260 MCMA	20	2031E		2031D	N15	W44	.700	16161	17.6		-F		P	2031	30	.4	D	ZX
	20	2052	2157	NO FLARE PATROL														
	20	2253	2302	NO FLARE PATROL														
	20	2341	0005	NO FLARE PATROL														
	21	0106	0115	NO FLARE PATROL														
	21	0130	0200	NO FLARE PATROL														
261 YUNN	21	0130	0130	0130D	N28	W58	.862	16160	16.7		1N		C		161			ZX
	21	0215	0217	NO FLARE PATROL														
262 PALE	21	0228E	0228U	0228D	N14	W43	.686	16161	17.9		-B	2	C		78		F	ZX
263 YUNN	21	0240	0240	0255	N16	W44	.702	16161	17.8	15	?N		C		193			ZX
	IMP.1 NO : PALE																	
GRP76264	21	0335	0338	0352	N15	W47	.735	16161	17.6	17	1N				210	3.1	DJ	
YUNN	21	0335	0338	0350	N16	W48	.747	16161	17.5	15	1B		C		225			
TACH	21	0336E		0354	N15	W46	.723	16161	17.7	180	1F		V	0336	212	3.1	CDJ	
265 YUNN	21	0428	0432	0442	N16	W45	.713	16161	17.8	14	1B		C		345			ZX
266 HTPR	21	0602	0606	0614	N28	W27	.567	16139	19.2	12	-F		C	0606	20	.2	E	ZX
GRP76267	21	0643+2	0655	0705	N15	W48	.746	16161	17.7	22	-N						E	
HTPR	21	0643	0655	0659	N15	W52	.789	16161	17.4	16	-F		C	0655	30	.5	E	
ISTA	21	0643		0705	N14	W48	.745	16161	17.7	22	-N		V				E	
BUCA	21	0645		0730	N15	W48	.746	16161	17.7	45	-N		C	0648	85	1.3		
GRP76268	21	0735>9	0751	0757	S19	W14	.463	16155	20.3	22	-F						E	
ISTA	21	0735		0755	S19	W12	.448	16155	20.4	20	-F		V				E	
HTPR	21	0745	0751	0757	S20	W19	.517	16155	19.9	12	-F		C	0751	20	.2	E	
KANZ	21	0749E		0757	S19	W14	.463	16155	20.3	80	-F	2					B	
269 ARST	21	0919E	0927	0944D	N27	W64	.904	16160	16.6	250	?N		P	0927	131		FJ	ZX
	IMP.1 NO : HTPR CATA																	
270 ARST	21	0950E	0952	1001D	N27	W63	.897	16160	16.7	110	?N		P	0952	105		FJ	ZX
	IMP.1 NO : HTPR ZURI																	
GRP76271	21	1020+1	1021+4	1027	N29	W62	.893	16160	16.8	7	-N				50	1.2		
CATA	21	1020	1025	1030	N29	W64	.906	16160	16.6	10	-B	*	C	1025	45	1.0		
HTPR	21	1020	1022	1026	N29	W60	.879	16160	16.9	6	-F	*	C	1022	20	.4		
ZURI	21	1021	1021	1027D	N32	W62	.897	16160	16.8	60	-F	*	P	1021	70	1.7		
GRP76272	21	1020+7	1022 1030	1038	N29	E05	.416	16156	21.8	18	-F							
HTPR	21	1020	1022	1038	N29	E04	.414	16156	21.7	18	-F		C	1022	20	.2	E	
KANZ	21	1027	1030	1033D	N29	E07	.423	16156	22.0	60	-N	2					D	
GRP76273	21	1031+2	1035	1039	N16	W47	.736	16161	17.9	8	-N							
HTPR	21	1031	1035	1039	N15	W47	.735	16161	17.9	8	-N		C	1035	30	.4		
KANZ	21	1033		1033D	N17	W47	.738	16161	17.9		-N	2						

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
274 ATHN	21	1035E	1037U	1043	N28	W60	.877	16160	16.9	80	-B	3	C		48		DE	ZX
275 HTPR	21	1106	1109	1120	N14	W55	.818	16161	17.3	14	-N		C	1109	60	1.0	E	ZX
276 KANZ	21	1141E		1158	N30	E10	.452	16156	22.2	170	-N	2						ZX
GRP76277	21	1233+2	1234+3	1243	S19	W18	.496	16155	20.2	10	-N				50	.6	E	
HTPR	21	1233	1234	1240	S19	W21	.524	16155	19.9	7	-F		C	1234	50	.5	E	
RAMY	21	1235	1237	1243	S19	W18	.496	16155	20.2	8	-N	3	C		51			
MCMA	21	1235	1236	1245	S20	W18	.508	16155	20.2	10	-N		C	1236	35	.4	E	
GRP76278	21	1320+1	1321 1349+5	1426	N15	W51	.778	16161	17.7	66	1B				130	2.1	EKSZ	
MCMA	21	1320	1321	1325	N17	W49	.760	16161	17.9	5	-N		C	1321	50	.8	E	
RAMY	21	1321	1335	1626	N14	W48	.745	16161	18.0	185	-N	3	C		89		Z F	
RAMY	21	1321	1354	1626	N14	W48	.745	16161	18.0	185	1B	*	C		168		Z F	
MCMA	21	1330	1351	1423D	N16	W52	.790	16161	17.7	530	1B	*	C	1351	125	2.1	EKS	
MCMA	21	1330	1410	1423	N16	W52	.790	16161	17.7	53	1B	*	C					
HTPR	21	1345	1349	1405	N15	W55	.819	16161	17.4	20	-B	*	C	1349	50	.9	E	
KANZ	21	1420E		1428D	N16	W52	.790	16161	17.7	80	-N	*						
279 RAMY	21	1324	1328	1334	S30	W50	.859	16137	17.8	10	-N	3	C		20			ZX
GRP76280	21	1337+1	1339+0	1348	N31	E31	.631	16163	23.9	11	-N						E	
HTPR	21	1337	1339	1345	N30	E30	.521	16163	23.8	8	-N		C	1339	100	1.1		
MCMA	21	1338	1339	1350	N32	E32	.648	16163	24.0	12	-N		C	1339	30	.4	E	
GRP76281	21	1341+3	1344+2	1358	N30	E05	.432	16156	21.9	17	-B				50	.6	EL	
HTPR	21	1341	1344	1358	N30	E04	.429	16156	21.9	17	-B		C	1344	40	.4	E	
MCMA	21	1343	1345	1405	N30	E05	.432	16156	21.9	22	-B		C	1345	50	.6	EL	
RAMY	21	1344	1346	1357	N28	E05	.401	16156	21.9	13	-B	3	C		70		F	
282 RAMY	21	1355	1359	1412	N27	W56	.845	16160	17.4	17	-N	3	C		21			ZX
GRP76283	21	1503E	1511	1545D	N16	W53	.800	16161	17.7	42	-N						EK	
MCMA	21	1503E	1511	1542D	N16	W52	.790	16161	17.7	390	-N		C	1511	80	1.4	EK	
KANZ	21	1545E		1545D	N16	W55	.820	16161	17.5		-N	*						
GRP76284	21	1547+1	1550+1	1609	N15	W56	.828	16161	17.5	22	-F				30	.5		
HTPR	21	1547	1550	1615	N15	W56	.828	16161	17.5	28	-F	*	C	1550	20	.3		
BIGB	21	1548	1551	1602	N15	W56	.828	16161	17.5	14	-N	*	C	1551	40	.7		
285 RAMY	21	1604	1606	1610	S29	W55	.889	16137	17.5	6	-N	3	C		22			ZX
286 RAMY	21	1604	1606	1615	N25	W65	.909	16160	16.8	11	-N	3	C		12			ZX
287 MCMA	21	1611E	1613	1617D	N30	E03	.427	16156	21.9	60	-N		C	1613	30	.3	E	ZX
288 HTPR	21	1740	1743	1803	N15	W57	.838	16161	17.5	23	-F		C	1743	20	.3		ZX
289 HOLL	21	1859	1900	1908	N15	W55	.819	16161	17.7	9	-B	3	C		44		F	ZX
290 HOLL	21	2004	2011	2012D	N16	W59	.856	16161	17.4	80	?B	3	C		187		U F	ZX
	IMP.1 NO : BIGB																	
291 BIGB	21	2125	2134	2139	N15	W58	.847	16161	17.5	14	-N	3	C	2134	80	1.6		ZX
292 HOLL	21	2228	2229	2231	N15	W59	.856	16161	17.5	3	-B	3	C		289			ZX
293 CULG	21	2336E	2337U	2337D	N33	E05	.477	16156	22.4	10	-F		P	2337	30	.3	L	ZX
294 VORO	22	0047	0048	0054	N15	W60	.864	16161	17.5	7	-N		C	0048	99	1.9	DJ	ZX
GRP76295	22	0121	0121 0129	0137	S07	E14	.316	16166	23.1	16	-N						D	
VORO	22	0121	0121	0135	S07	E14	.316	16166	23.1	14	-N		C	0121	108	1.1	D	
CULG	22	0125E	0129	0139D	S07	E15	.328	16166	23.2	140	-N		P	0129	60	.6		
296 VORO	22	0127	0135	0245	N16	W59	.856	16161	17.6	78	?F		C	0135	278	5.3	EJK	ZX
	IMP.2 NO : CULG																	
297 CULG	22	0400	0404	0407U	N30	W10	.450	16156	21.4	70	-F		C	0404	20	.2		ZX
298 TACH	22	0400E	0418	0431D	N16	W59	.856	16161	17.7	310	?F		V	0418	398	7.1	E	ZX
	IMP.2 NO : CULG																	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR AREA Sq. Deg.		
GRP76299	22	0542+1	0544+1	0550	N30	W06	.433	16156	21.8	8	-N				70	.8	D	
CULG	22	0542	0545	0550	N30	W06	.433	16156	21.8	8	-N		C	0545	70	.8		
TACH	22	0543	0544	0549	N31	W06	.448	16156	21.8	6	-N		C	0544	71	.8	D	
GRP76300	22	0600E	0657 0806	0808C	N14	W64	.896	16161	17.4	128	1N						FJK	
ISTA	22	0600E		0710	N14	W61	.872	16161	17.7	70D	1N	*	V				BEF	
ABST	22	0651E	0827	0921	N16	W64	.896	16161	17.5	150D	1B	*	P	0827	131		FJK	
ABST	22	0652	0657	0717	N14	W58	.846	16161	17.9	25	1N	*	C	0657	114	2.1	DJ	
ABST	22	0803	0806	0808	N13	W70	.936	16161	17.1	5	-N	*	C	0806	87		DJ	
301 ISTA	22	0600E		0615	N12	W48	.742	16165	18.7	150	-N		V				DB	ZX
302 ABST	22	0718	0721	0724	N13	W48	.743	16165	18.7	6	-N		C	0721	87	1.3	DJ	ZX
303 ABST	22	0845	0847	0905	N13	W49	.755	16165	18.7	20	-N		C	0847	131	2.0	DJ	ZX
304 ABST	22	0845	0851	0905	N14	W11	.244		21.5	20	-N		C	0851	122	1.3	DJ	ZX
	22	1004	1010	NO FLARE PATROL														
	22	1025	1026	NO FLARE PATROL														
	22	1105	1115	NO FLARE PATROL														
	22	1155	1245	NO FLARE PATROL														
305 HUAN	22	1303		1319	N15	W57	.837	16161	18.3	16	-N	1	C	1310	65	1.2	E	ZX
GRP76306	22	1333>9		1440D	N13	W65	.903	16161	17.7	71	-N							
RAMY	22	1333E	1445	1518	N13	W65	.903	16161	17.7	105D	-B	3	C		37		F	
HUAN	22	1358		1444	N14	W65	.903	16161	17.7	46	-F	1	C	1425			E	
307 RAMY	22	1336	1341	1342	N11	W51	.775	16165	18.7	6	-N	3	C		17			ZX
GRP76308	22	1614+4	1633+0	1655	N14	W65	.903	16161	17.8	41	-N				58		HU	
HUAN	22	1614		1630	N15	W65	.903	16161	17.8	16	-F	1	P	1619			E	
HOLL	22	1618	1633	1715	N14	W65	.903	16161	17.8	57	-B	3	C		67		U	
RAMY	22	1629	1633	1655	N13	W65	.903	16161	17.8	26	-B	3	C		33		F H	
GRP76309	22	1732+7	1740+2	1756	N13	W67	.917	16161	17.7	24	-B						F	
HOLL	22	1732	1740	1756	N15	W70	.936	16161	17.5	24	-B	2	C		55		F	
RAMY	22	1739	1742	1755	N12	W65	.903	16161	17.9	16	-B	3	C		24		F	
GRP76310	22	1800E	1808	1828	N13	W66	.910	16161	17.8	28	-N				35			
MCMA	22	1743E		1810D	N15	W68	.924	16161	17.6	270	-N		P	1810	40	1.0	E	
RAMY	22	1800	1808	1828	N12	W65	.903	16161	17.9	28	-N	3	C		32		F	
311 MCMA	22	1810E		1810D	S05	E05	.193	16166	23.1		-N		P	1810	30	.3	E	ZX
GRP76312	22	2002	2004+4 2019	2026	N15	W70	.936	16161	17.6	24	-N				35			
HOLL	22	2002	2004	2026	N15	W70	.936	16161	17.6	24	-B	2	C		45		DE	
HOLL	22	2002	2019	2026	N15	W70	.936	16161	17.6	24	-B	2	C		40		DE	
PALE	22	2005E	2008U	2008D	N15	W70	.936	16161	17.6	3D	-N	2	C		17		FDE	
313 PALE	22	2119E	2122U	2142	N15	W67	.917	16161	17.9	23D	-N	2	C		33		DE	ZX
314 CULG	22	2329	2334	2341	S27	W76	.984	16137	17.3	12	-F		C	2334	30			ZX
315 CULG	22	2331	2335	2348	N33	W14	.514	16156	21.9	17	-N		C	2335	150	1.7	F	ZX
316 CULG	23	0007	0012	0039U	N16	W73	.953	16161	17.5	32D	-F		C	0012	60		T	ZX
317 CULG	23	0022	0026	0032	S27	W85	.999	16137	16.6	10	-F		C	0026	10			ZX
318 CULG	23	0147	0151	0201	S09	W33	.584	16148	20.6	14	-F		C	0151	40	.5		ZX
GRP76319	23	0158>9	0215+0	0232	N15	W73	.953	16161	17.6	34	1N				110		FU	
YUNN	23	0158		0205	N16	W74	.958	16161	17.5	7	1N		C	0205	96			
CULG	23	0202	0215	0234	N15	W73	.953	16161	17.6	32	1F		C	0215	120		T	
PALE	23	0208	0215	0230	N14	W73	.953	16161	17.6	22	1B	3	C		106		U F	
GRP76320	23	0215+1	0216+1	0228	N32	W15	.506	16156	22.0	13	-B						HU	
CULG	23	0215	0217	0226	N33	W15	.519	16156	22.0	11	1N		C	0217	180	2.1		
PALE	23	0216	0216	0229	N32	W15	.545	16156	22.0	13	-B	3	C		49		U H	
321 PALE	23	0221	0227	0241	N29	W85	.993	16160	16.7	20	-N	3	C					ZX
322 CULG	23	0232	0233	0250	S28	W85	.999	16137	16.7	18	?N		C	0233	60			ZX
	IMP.1 NO 1 PALE																	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq Deg.		
GRP76323	23	0350E	0350 0357	0401	N29	W82	.986	16160	17.0	11	-N						D	
MANI	23	0350E	0350U	0400	N28	W83	.989	16160	16.9	10D	-N	3	V		50			
TACH	23	0354E	0357	0402	N30	W81	.984	16160	17.1	8D	1F		V	0357	133		D	
324 CULG	23	0400	0403	0417	N10	E02	.093	16153	23.3	17	-N		C	0403	70	.7		ZX
325 CULG	23	0432	0436U	0503	S28	W87	1.000	16137	16.7	31	-F		C	0436	40			ZX
GRP76326	23	0457E	0647 0743	0800D	N28	W90	.999	16160	16.5	183	2N						AHJKO	
ABST	23	0457E	0647	0948	N29	W90	.999	16160	16.5	291D	2N		P	0647	183		AFJK	
KHAR	23	0715E	0743	0800D	N28	W88	.997	16160	16.7	45D	1N		P	0738			EHKOT	
ISTA	23	0745E		0757D	N28	W90	.999	16160	16.6	12D	-N		V				A	
327 ABST	23	0504E	0508	0518	N16	W80	.982	16161	17.2	14D	?F		P	0508	131		FJ	ZX
	IMP.1 NO : CULG MITK TACH																	
328 ABST	23	0522	0524	0531D	N15	W80	.982	16161	17.2	9D	?F		P	0524	122		EJ	ZX
	IMP.1 NO : CULG MITK TACH																	
329 CULG	23	0546	0547	0551	S25	W87	1.000	16137	16.7	5	-F		C	0547	10			ZX
330 ABST	23	0546	0548	0554D	N17	W79	.978	16161	17.3	8D	?N		P	0548	131		EJ	ZX
	IMP.1 NO : CULG MITK TACH																	
331 ABST	23	0550	0551	0554	N32	W12	.488	16156	22.3	4	-N		C	0551	87	1.0	DJV	ZX
332 ABST	23	0559	0604	0700	N15	W80	.982	16161	17.2	61	?N		C	0604	131		EJ	ZX
	IMP.1 NO : CULG MITK																	
333 ABST	23	0633	0637	0641	N13	W63	.888	16165	18.5	8	-F		C	0637	87		FJ	ZX
334 ABST	23	0637	0644	0648	N33	W18	.539	16156	21.9	11	-F		C	0644	122	1.5	DJ	ZX
335 ABST	23	0709	0710	0711D	N14	W64	.896	16165	18.5	2D	-F		P	0710	87		DJV	ZX
336 KHAR	23	0715E		0745D	N11	W76	.967	16161	17.6	30D	-N		P				EOT	ZX
337 ISTA	23	0745E		0755	S15	E01	.343		23.4	10D	-N		V				E	ZX
GRP76338	23	0750>9	0802+4	0810	N13	W76	.967	16161	17.6	20	-N						EJ	
KHAR	23	0750E		0810D	N11	W76	.967	16161	17.6	20D	-N	*	V	0805			ET	
ZURI	23	0800	0802	0808	N14	W77	.971	16161	17.6	8	-N	*	C	0802	40			
ISTA	23	0802E		0810	N14	W74	.960	16161	17.8	8D	-N	*	V				D	
ABST	23	0805E	0806	0824	N13	W80	.982	16161	17.3	19D	1N	*	P	0806	131		EJ	
GRP76339	23	0754	0812+2	0827	N32	W19	.534	16156	21.9	33	-N				140	1.7	EHJL	
ZURI	23	0754	0814	0846	N33	W18	.539	16156	22.0	52	-N		C	0814	160	2.0		
KHAR	23	0802E		0810D	N32	W20	.542	16156	21.8	8D	-F		V	0808			EHLT	
ABST	23	0806	0812	0827	N32	W20	.542	16156	21.8	21	-N		C	0812	140	1.6	FJ	
MONT	23	0812	0814	0822	N33	W18	.539	16156	22.0	10	-F		C	0814	60		E	
GRP76340	23	0815+3	0821+7	0837	N30	W85	.993	16160	17.0	22	-N				50		AD	
YUNN	23	0815	0821	0840	N32	W84	.991	16160	17.0	25	1S		C		79			
ZURI	23	0818	0822	0834	N30	W84	.991	16160	17.0	16	1N		C	0822	60			
MONT	23	0818	0823	0831	N30	W86	.995	16160	16.9	13	-F		C	0823	50		D	
ISTA	23	0826		0838	N28	W90	.999	16160	16.6	12	-N		V				A	
ATHN	23	0827E	0828U	0838	N29	W84	.991	16160	17.1	11D	-B	3	C		32			
GRP76341	23	0852+0	0854+0	0904	N32	W14	.500	16156	22.3	12	-F				80	.9	DJ	
ABST	23	0852	0854	0900	N33	W14	.513	16156	22.3	8	-N		C	0854	87	1.0	CJ	
ZURI	23	0852	0854	0908	N32	W14	.500	16156	22.3	16	-F		P	0854	80	1.0		
342 ZURI	23	0906E	0906	0908	N14	W77	.971	16161	17.6	2D	-N		P	0906	60			ZX
343 KHAR	23	0907E		0940D	N29	W90	.999	16160	16.6	33D	-N		P				HT	ZX
344 KHAR	23	0913E		0923D	N13	W65	.903	16165	18.5	10D	-F		P				D	ZX
GRP76345	23	0934	0937+0	1000	N15	E63	.888	16167	28.1	26	-N				90	2.0	D	
TELV	23	0934	0937	1000	N14	E64	.897	16167	28.2	26	-B	*	C	0937	60	1.4	D	
KHAR	23	0935E	0937	0955D	N16	E62	.881	16167	28.0	20D	1F	*	P	0938	120			

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	HEIMATH PLAGE REGION	CMP. DAY	MIN.		CONF	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP76346	23	0934+1	0948+2	1002	N15	W79	.978	16161	17.5	28	1N						DJ	
KHAR	23	0934E		1007D	N15	W79	.978	16161	17.5	330	1N		P	0934			T	
ABST	23	0935	0948	1002D	N15	W80	.982	16161	17.4	270	2N		P	0948	175		DJ	
MONT	23	0947	0950	0954	N15	W76	.967	16161	17.7	7	-F		C	0950	50		D	
GRP76347	23	0954+4	1000+4	1026	N32	W18	.527	16156	22.1	32	-N				140	1.7	EHJ	
ABST	23	0954	1000	1002D	N33	W19	.546	16156	22.0	80	-N		P	1000	175	2.8	EJ	
MONT	23	0955	1002	1024	N31	W18	.515	16156	22.1	29	-N		C	1002	100		E	
KHAR	23	0958	1004	1027D	N32	W18	.527	16156	22.1	290	-F		V	1004			EHT	
GRP76348	23	1050+0	1054+1 1110	1114	N13	W65	.903	16165	18.6	24	-N				70	1.7	D	
MONT	23	1050	1054	1102	N14	W66	.918	16165	18.5	12	-F		C	1054	50		D	
KHAR	23	1050E	1055	1120D	N13	W65	.903	16165	18.6	300	1N		P	1053	100			
ZURI	23	1106	1110	1114	N13	W65	.903	16165	18.6	8	-N		C	1110	90	2.1		
349 ATHN	23	1053	1054	1108D	N29	W59	.871	16139	19.0	70	-N	1		1054	33	.5		ZX
350 KHAR	23	1057E		1103D	N29	W88	.997	16160	16.9	60	-F		V				DHT	ZX
GRP76351	23	1114	1114	1124D	N32	W18	.527	16156	22.1	10	-N						E	
ZURI	23	1114	1114	1124D	N33	W19	.546	16156	22.0	100	-N		P	1114	50	.6		
KHAR	23	1115E		1120D	N32	W18	.527	16156	22.1	50	-F		V	1115			ET	
	23	1124	1130	NO FLARE PATROL														
	23	1155	1210	NO FLARE PATROL														
	23	1231	1303	NO FLARE PATROL														
	23	1329	1336	NO FLARE PATROL														
352 ZURI	23	1411E	1413	1443	N14	W80	.982	16161	17.6	32D	?N		P	1413	120			ZX
	IMP.1 NO ↑ HOLL																	
353 KANZ	23	1507	1510	1510D	N32	W32	.646	16156	21.2	3D	-F	1						ZX
354 HOLL	23	1636	1640	1649	N31	W22	.547	16156	22.0	13	-N	4	C		23			ZX
GRP76355	23	1645+1	1648+2	1712	S05	W07	.212	16166	23.2	27	-N				110	1.1	U	
HOLL	23	1645	1650	1715	S05	W07	.212	16166	23.2	30	-B	4	C		142		UDE	
BIGB	23	1646	1648	1708	S06	W07	.226	16156	23.2	22	-N	3	C	1648	80	.8		
GRP76356	23	1848+4	1848 1904+3	1923	N32	W24	.575	16156	22.0	35	-F				40	.5	F	
PALE	23	1848	1904	1923	N23	W24	.490	16156	22.0	35	-N	3	C		34		F	
PALE	23	1848	1848	1851	N23	W24	.490	16156	22.0	3	-N	3	C		34		F	
BIGB	23	1852	1907	1918E	N32	W24	.575	16156	22.0	26D	-F	3	C	1907	50	.6		
	23	1952	2000	NO FLARE PATROL														
357 PALE	23	2111	2127	2153	N31	W26	.583	16156	21.9	42	-N	3	C		75		U F	ZX
	23	2113	2125	NO FLARE PATROL														
358 PALE	23	2319	2320	2324	N30	W26	.573	16156	22.0	5	-N	3	C		42		F	ZX
GRP76359	24	0058+9	0109+0 0156	0224	N31	W28	.600	16156	21.9	86	-B							
PALE	24	0058	0109	0132	N31	W29	.610	16156	21.9	34	-B	3	C		119		FDE	
PURP	24	0107	0109	0220	N31	W28	.600	16156	21.9	73	1N		C					
PALE	24	0152	0156	0227	N31	W29	.610	16156	21.9	35	-B	3	C		72		F	
GRP76360	24	0441	0520	0554	N32	W30	.627	16156	21.9	73	1F							
CULG	24	0441	0520	0542	N33	W28	.618	16156	22.1	61	1F		C	0520	180	2.4		
HTPR	24	0532E		0606	N31	W33	.742	16156	21.8	340	-F		C	0533	20	.3		
GRP76361	24	0506+2	0514	0522D	N14	E86	.996	16171	30.7	16	1N						E	
CULG	24	0506U	0524U	0604U	N13	E88	.999	16171	30.8	58D	1N		C	0524	60			
TACH	24	0508	0514	0522	N16	E85	.994	16171	30.6	14	1B		C	0514	53		E	
362 ABST	24	0610E	0612	0616	N31	W28	.600	16156	22.2	6D	-N		P	0612	131	1.7	E	ZX
363 ABST	24	0626	0628	0632D	N13	W75	.962	16165	18.6	6D	?N		P	0628	87		E	ZX
	IMP.1 NO ↑ HTPR			MITK	CATA													
364 ABST	24	0628	0638	0639	S15	E47	.774	16169	27.8	11	?N		C	0630	131	2.1	D	ZX
	IMP.1 NO ↑ HTPR			MITK	CATA													

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONG	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
GRP76365	24	0650>9	0707 0727	0735	N31	W31	.628	16156	22.0	45	1N						D	
PURP	24	0650	0707	0735	N31	W32	.638	16156	21.9	45	1N		C					
ABST	24	0725	0727	0731D	N32	W31	.636	16156	22.0	6D	-N		P	0727	105	1.4	D	
GRP76366	24	0742+9	0758+7 0815	0835	N31	W31	.628	16156	22.0	53	-B				140	1.8	FJKU	
ABST	24	0742	0804	0846	N31	W31	.628	16156	22.0	64	1B		C	0804	175	2.3	FJK	
ISTA	24	0745E	0800	0825	N31	W31	.628	16156	22.0	40D	1B		V				K	
HTPR	24	0748	0815	0840	N31	W34	.751	16156	21.8	52	-B		C	0815	150	2.1	EU	
MONT	24	0751	0758	0832	N32	W30	.627	16156	22.1	41	-B		C	0758	110			
KANZ	24	0752E		0830D	N33	W31	.644	16156	22.0	38D	-B	2						
CATA	24	0755	0805	0845	N30	W32	.630	16156	21.9	50	1B	2	C	0805	160	2.2	T	
ATHN	24	0759	0801	0826	N31	W30	.619	16156	22.1	27	-B	3	C		80		F	
367 KHAR	24	0855		0905D	S02	W33	.555	16148	21.9	10D	-F		V	0858			D	ZX
368 ABST	24	0856	0859	0912D	N32	W33	.655	16156	21.9	16D	-N		P	0859	114	1.5	DJ	ZX
369 KHAR	24	0858	0858	0905D	S30	W90	1.001	16137	17.6	7D	-F		V	0858			D	ZX
GRP76370	24	0938>9	0949+1	0959	N08	W10	.179	16153	23.7	21	-N						EJ	
ABST	24	0938E	0949	0955	N08	W11	.196	16153	23.6	17D	-N		P	0949	157	1.6	EJ	
HTPR	24	0948	0950	1002	N08	W10	.179	16153	23.7	14	-B		C	0950	70	.7	E	
GRP76371	24	1017+8	1028 1100+2	1142	N31	W33	.648	16156	22.0	85	1N				180	2.4	EO	
KHAR	24	1017E	1100	1200D	N30	W34	.650	16156	21.9	103D	1N		P	1102	250	3.5	EO	
HTPR	24	1025	1028	1140	N31	W35	.760	16156	21.8	75	-F		C	1100	60	.8	E	
ZURI	24	1056	1102	1116D	N31	W33	.648	16156	22.0	20D	1N		P	1102	180	2.5		
MCMA	24	1140E		1142D	N32	W33	.655	16156	22.0	2D	-F		P	1140	80	1.1	E	
372 KHAR	24	1020E		1039D	N14	W90	1.000	16161	17.7	19D	-F		V	1031			E	ZX
373 KHAR	24	1137E		1148D	N17	E80	.981	16171	30.5	11D	-F		V	1137			H	ZX
374 HTPR	24	1221	1227	1235	N31	W46	.769	16156	21.1	14	-F		C	1227	30	.4		ZX
GRP76375	24	1421+5	1438	1454	N31	W36	.676	16156	21.9	33	-F				35	.5	E	
HTPR	24	1421	1438	1457	N31	W37	.778	16156	21.8	36	-N		C	1438	40	.5	E	
HUAN	24	1426		1450	N32	W36	.683	16156	21.9	24	-F	1	C	1435	30	.4	E	
376 HUAN	24	1447		1452	N08	W13	.229	16153	23.6	5	-F	1	C	1450	15	.2	D	ZX
GRP76377	24	1507+0	1512+4 1531	1607	N31	W35	.667	16156	22.0	60	-N				70	1.0	E	
HUAN	24	1507		1603	N32	W36	.683	16156	21.9	56	-N	1	C	1515	50	.7	E	
BIGB	24	1507	1512	1608	N31	W35	.667	16156	22.0	61	-N	3	C	1512	70	.9		
HTPR	24	1507	1516	1605	N31	W36	.769	16156	21.9	58	-N		C	1516	80	1.1	E	
RAMY	24	1525E	1531U	1609	N30	W33	.640	16156	22.2	44D	-B	3	C		73		F	
GRP76378	24	1614+1	1616+0	1622	N29	W41	.713	16156	21.6	8	-N				70	1.0		
BIGB	24	1614	1616	1631	N29	W41	.713	16156	21.6	17	-N	3	C	1616	50	.7		
RAMY	24	1615	1616	1622	N29	W36	.664	16156	22.0	7	-N	3	C		95		F	
HUAN	24	1615		1618	N31	W42	.733	16156	21.5	3	-F	1	C				E	
GRP76379	24	1850>9	1903	1913D	N13	E68	.923	16171	29.9	23	-N							
RAMY	24	1850E	1916U	2018D	N14	E71	.942	16171	30.1	88D	-N	2	C		20			
BIGB	24	1901	1903	1913	N12	E65	.903	16171	29.7	12	-N	3	C	1903	50			
380 BIGB	24	1857	1859	1906	N14	E00	.154	16153	24.8	9	-N	3	C	1859	50	.5		ZX
381 HOLL	24	1900	1902	1906	N10	W18	.317	16153	23.4	6	-N	3	C		25		F	ZX
382 RAMY	24	1912E	1958U	2018D	S15	E17	.442	16164	26.1	66D	-N	2	C		30			ZX
383 BIGB	24	2155	2200	2209	N12	E63	.887	16171	29.6	14	-N	3	C	2200	30	.7		ZX
384 CULG	24	2246	2312U	2330	N33	W38	.707	16156	22.1	44	-N		C	2312	120	1.7		ZX
GRP76385	25	0040>9	0128+3	0200D	N31	W40	.713	16156	22.0	80	1B				140	2.1	UZ	
HOLL	25	0040	0128	0132C	N31	W41	.723	16156	22.0	52D	-B	3	C		113		Z U	
PALE	25	0106	0131	0200D	N31	W39	.704	16156	22.1	54D	1B	3	C		180		FDE	
386 PALE	25	0125	0126	0144	N16	E73	.952	16171	30.5	19	-N	3	C				FDE	ZX
	25	0152	0202	NO FLARE PATROL														

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
	25	0215	0232	NO FLARE PATROL														
387 PALE	25	0228	0245	0321	N31	W40	.713	16156	22.1	61	-N	3	C		49		FDE	ZX
388 CULG	25	0242	0259U	0517	S17	E83	.381	16164	25.3	155	-F		C	0259	60	.6	SFK	ZX
389 PALE	25	0249	0256	0326	N16	E72	.947	16171	30.5	37	?B	3	C		110		FDE	ZX
	IMP.1 NO I CULG			MITK														
390 ABST	25	0453E	0456	05000	N33	W44	.768	16156	21.9	70	?F		P	0456	166	2.6	E	ZX
	IMP.1 NO I TACH			CLLG														
391 ABST	25	0735	0736	0739	N08	W24	.407	16153	23.5	4	-F		P	0736	87	1.0	D	ZX
GRP76392	25	0750E	0750	0756	S15	E13	.406	16164	26.3	6	-F							
ZURI	25	0750E	0750	0756	S15	E12	.398	16164	26.2	60	-F		P	0750	80	.9		
MANI	25	0752E	0752U	0756C	S15	E14	.415	16164	26.4	40	-N	2	V		20			
393 HTPR	25	0802	0805	0810	S16	E12	.412	16164	26.2	8	-F		C	0810	20	.2	D	ZX
GRP76394	25	0826+9	0838+1 0851+3	0933	S16	E12	.412	16164	26.3	67	-N				60	.7	EKV	
WEND	25	0826		0941	S14	E13	.393	16164	26.3	75	-N		C		50	.5	E	
KANZ	25	0826		0930	S16	E11	.404	16164	26.2	64	-N	1					F	
HTPR	25	0829	0852	0940	S14	E11	.376	16164	26.2	71	-N		C	0852	40	.4	EK	
WEND	25	0830		0933	S13	E09	.347	16164	26.0	63	-N		C				D	
WEND	25	0834		08420	S19	E17	.492	16164	26.6	80	-F		C					
HTPR	25	0835	0839	0845	S19	E18	.500	16164	26.7	10	-F		C	0839	30	.4	E	
MONT	25	0835	0839	0928	S15	E09	.376	16164	26.0	53	-N		C	0839	80		E	
ZURI	25	0836	0838	0844	S18	E18	.488	16164	26.7	8	-N		C	0838	50	.6		
ZURI	25	0836	0854	0926	S15	E12	.398	16164	26.3	50	-N		C	0854	180	2.1		
ABST	25	0837	0838	0856	S18	E18	.488	16164	26.7	19	-F		C	0838	131	1.5	EV	
ABST	25	0838	0841	0847	S14	E12	.384	16164	26.3	9	-N		C	0841	87	.9	D	
ABST	25	0838	0851	0929	S14	E07	.349	16164	25.9	51	-N		C	0851	87	1.0	D	
ABST	25	0849	0904	09360	S15	E11	.390	16164	26.2	470	-N		P	0904	87	1.0	D	
395 KANZ	25	1105		11560	S15	E04	.352	16164	25.8	510	-F	1						ZX
396 WEND	25	1211		1257	N11	E61	.871	16171	30.1	46	-N		C		60	1.3		ZX
GRP76397	25	1431+1	1432+0	1445	N15	E63	.888	16171	30.3	14	-N				20	.4		
BIGB	25	1431	1432	1446	N16	E65	.903	16171	30.5	15	-B	3	C	1432	20			
HUAN	25	1431E		1435	N15	E66	.910	16171	30.6	40	-F	1	P	1432	15		D	
RAMY	25	1432	1432	1444	N16	E61	.872	16171	30.2	12	-B	3	C		16		F	
HOLL	25	1432	1432	1446	N15	E62	.880	16171	30.3	14	-B	3	C		19		FDE	
GRP76398	25	1600+2	1604+3	1612	S06	W33	.571	16166	23.2	12	-B				50	.6	F	
WEND	25	1600		16100	S06	W29	.516	16166	23.5	100	-N		C	1604	60	.7		
HOLL	25	1601	1607	1619	S06	W33	.571	16166	23.2	18	-B	3	C		59		F	
RAMY	25	1602	1606	1612	S07	W33	.575	16166	23.2	10	-B	3	C		39			
BIGB	25	1602	1604	1610	S06	W33	.571	16166	23.2	8	-B	3	C	1604	30	.4		
GRP76399	25	1737+1	1739+0	1756	S07	W35	.602	16166	23.1	19	-N						F	
HOLL	25	1737	1739	1756	S08	W35	.606	16166	23.1	19	-B	3	C		75		F	
BIGB	25	1738	1739	1755	S06	W35	.598	16166	23.1	17	-N	3	C	1735	30	.4		
400 BIGB	25	2048	2056	2103	S22	E90	1.001	16174	1.6	15	-N	3	C	2056	40			ZX
401 BIGB	25	2300	2301	2317	N32	W60	.882	16156	21.5	17	-N	3	C	2301	40	.8		ZX
402 HOLL	25	2307	2311	0007	N32	W40	.719		23.0	60	-B	3	C		100		F	ZX
403 BIGB	26	0003	0004	0006	N33	W56	.856	16156	21.8	3	-F	3	C	0004	30	.6		ZX
	26	0147	0235	NO FLARE PATROL														
404 PALE	26	0235E	0237U	02530	S15	W01	.347	16164	26.0	180	-N	2	C		30		DE	ZX
	26	0237	0240	NO FLARE PATROL														
405 TACH	26	0340E		0353	S15	E18	.454	16169	27.5	130	1F		V	0340	442	5.1	E	ZX
406 HTPR	26	0525E		0550	S15	E18	.454	16169	27.6	250	-F		C	0525	40	.4	BE	ZX
GRP76407	26	0655+1	0658	0725	S13	W02	.316	16164	26.1	30	-N							
HTPR	26	0655	0658	0725	S14	W03	.334	16164	26.1	30	-F		C	0658	30	.3	E	
ICTA	26	0656		0725	S13	W02	.316	16164	26.1	29	-B		V				F	

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR AREA Sq. Deg.		
408 ISTA	26	0708		0713	S14	E18	.443	16169	27.6	5	-N		V				E	ZX
409 KANZ	26	0730E		0740	S13	W04	.321	16164	26.0	10D	-N	2						ZX
GRP76410	26	0730+5	0735+1	0749	S14	E17	.433	16169	27.6	19	-N						E	
KANZ	26	0730E	0735	0747	S14	E16	.422	16169	27.5	17D	-B	*					E	
HTPR	26	0731	0736	0755	S16	E17	.456	16169	27.6	24	-N	*	C	0736	20	.2	E	
ISTA	26	0732		0748	S14	E17	.433	16169	27.6	16	-N	*	V				E	
BUCA	26	0735		0750	S14	E17	.433	16169	27.6	15	-F	*	C	0738	107	1.2	E	
GRP76411	26	0901+4	0905+0	0912	N09	E25	.424	16167	28.3	11	-N						D	
TELV	26	0901	0905	0914	N07	E27	.452	16167	28.4	13	-N		C	0905	60	.7		
KANZ	26	0905	0905	0909	N12	E24	.417	16167	28.2	4	-N	2					C	
GRP76412	26	0921+8	0929+3	0948	S15	W07	.366	16164	25.9	27	-N				100	1.1		
KANZ	26	0921	0929	0953	S15	W08	.371	16164	25.8	32	-N	2						
MONT	26	0923	0930	0948	S14	W05	.341	16164	26.0	25	-N		C	0930	110			
ATHN	26	0929	0932	0944	S16	W07	.381	16164	25.9	15	-N	1		0932	98	1.0		
GRP76413	26	0933+5	0935 0949+3	1019	N15	E54	.808	16171	30.4	46	-N						FL	
ATHN	26	0933	0935	1013	N13	E51	.775	16171	30.2	40	-B	4	C		80		F	
MONT	26	0935	0952	1019	N15	E56	.827	16171	30.6	44	-N		C	0952	70			
KANZ	26	0938	0949	1024	N15	E54	.808	16171	30.5	46	-N	2						
LOCA	26	0940E	0940	1015	N15	E52	.788	16171	30.3	35D	1N		V	0940	244	4.2		
KHAR	26	1004E		1022D	N16	E55	.819	16171	30.5	18D	1N		P	1009	180	3.3	L	
414 KHAR	26	1015	1015	1018	S07	W44	.714	16166	23.1	3	-F		V	1015			DT	ZX
GRP76415	26	1042+2	1047>9	1119	N16	E17	.339	16167	27.7	37	-F						EH	
MONT	26	1042	1047	1100D	N16	E17	.339	16167	27.7	18D	-F		C	1047	50		E	
KANZ	26	1044	1052	1108	N16	E16	.326	16167	27.6	24	-N	2						
KHAR	26	1054E	1057	1130D	N17	E17	.348	16167	27.7	36D	1F		P	1100	240	2.7	EH	
GRP76416	26	1120+2	1123+0	1134	S06	W43	.700	16166	23.2	14	-F						H	
KHAR	26	1120E	1123	1133D	S07	W44	.714	16166	23.2	13D	-F		P	1123	100	1.5	HT	
KANZ	26	1122	1123	1134	S05	W43	.697	16166	23.2	12	-F	2						
417 KHAR	26	1131	1132	1140D	S15	E85	.998	16175	1.9	9D	-F		P	1131			D	ZX
	26	1150	1308	NO FLARE PATROL														
	26	1321	1333	NO FLARE PATROL														
GRP76418	26	1414	1416	1420	S18	E58	.881	16174	30.9	6	-F				20	.4	D	
HOLL	26	1414	1416	1420	S17	E56	.863	16174	30.8	6	-N	3	C		21			
HUAN	26	1415E		1419	S20	E60	.900	16174	31.1	4D	-F	1	P	1417	15		C	
GRP76419	26	1439+5	1453	1514D	N15	E53	.798	16171	30.6	35	-N				40	.7	D	
BIGB	26	1439	1453	1549	N16	E53	.799	16171	30.6	7D	-N	3	C	1453	40	.7		
WEND	26	1443E		1456D	N15	E52	.788	16171	30.5	13D	-N		C	1450	45	.8		
HUAN	26	1444		1514	N15	E55	.818	16171	30.7	30	-F	1	C	1450	20	.3	C	
420 BIGB	26	2030	2037	2042	S29	E90	1.001	16179	2.6	12	-N	3	C	2037	40			ZX
GRP76421	26	2058+7	2107+5	2128	S13	W11	.363	16164	26.0	30	-N				80	.9	FU	
PALE	26	2058	2107	2128D	S15	W11	.391	16164	26.0	30D	-N	3	C		98		F	
HOLL	26	2058	2112	2131	S13	W11	.363	16164	26.0	33	-B	3	C		75		U F	
BIGB	26	2105	2108	2122	S13	W11	.363	16164	26.1	17	-N	3	C	2108	60	.6		
422 HOLL	26	2237	2238	2243	N15	E45	.710	16171	30.3	6	-B	3	C		49		FDE	ZX
423 HOLL	27	0037	0039	0045	S15	W14	.417	16164	26.0	8	-B	3	C		48			ZX
GRP76424	27	0053+8	0101+3 0110	0116	N16	E44	.700	16171	30.3	23	-N				60	.9		
PALE	27	0053E	0102U	0116	N17	E44	.702	16171	30.3	23D	-B	3	C		53		FDE	
HOLL	27	0055	0101	0113D	N17	E44	.702	16171	30.3	18D	-B	3	C		60		DE	
BIGB	27	0101	0104	0118	N16	E45	.712	16171	30.4	17	-N	3	C	0104	60	.9		
PURP	27	0103	0110	0116	N13	E43	.683	16171	30.3	13	-F		C					
GRP76425	27	0128E	0214+4	0311	N13	E45	.707	16171	30.4	103	1N						S	
PALE	27	0128E	0214U	0322	N17	E45	.714	16171	30.4	114D	-B	3	C		91		FDE	
CULG	27	0149U	0215U	0300U	N13	E46	.719	16171	30.5	71D	1F		C	0215	280	4.0	FS	
PURP	27	0207	0218	0300	N13	E43	.683	16171	30.3	53	1F		C					
426 CULG	27	0208	0236	0344	S20	W27	.598	16164	25.1	96	-F		C	0236	80	1.0		ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Millionths of Disk	CORR. AREA Sq. Deg.		
427 CULG	27	0234E	0240	0251	S21	E80	.992	16174	2.1	170	-F		P	0240	20			ZX
428 HTPR	27	0542E		0630	N18	E48	.749	16171	30.8	480	-F		C	0542	30	.5	D	ZX
429 ISTA	27	0806		0810	S15	W17	.445	16164	26.1	4	-F		V				D	ZX
GRP76430	27	0851+4	0907+8 0920	0936	N13	E38	.619	16171	30.2	45	-N						JK	
ABST	27	0851	0857	0903	N14	E37	.608	16171	30.1	12	1F		C	0857	175	2.3	DJ	
HTPR	27	0853E	0911	0945	N13	E38	.619	16171	30.2	520	-N		C	0911	80	1.0	EKT	
MONT	27	0853	0914	0934	N14	E38	.621	16171	30.2	41	-N		C	0914	150			
CATA	27	0855	0915	09250	N13	E37	.606	16171	30.1	300	1B	2	P	0915	224	2.9		
ABST	27	0855	0911	09110	N15	E40	.649	16171	30.4	160	-N		P	0911	131	1.8	FJ	
ABST	27	0859	0910	09150	N13	E36	.592	16171	30.1	160	1F		P	0910	175	2.2	FJ	
PURP	27	0904	0920	0935	N13	E39	.632	16171	30.3	31	1N		C					
ATHN	27	0906	0908	1014	N14	E39	.634	16171	30.3	68	-B	3	C		95		F	
LOCA	27	0907E	0907	0930	N13	E37	.606	16171	30.2	230	-N		V	0907	102	1.3		
KANZ	27	1005E		10110	N14	E36	.594	16171	30.1	60	-F	1						
GRP76431	27	0934+1	0936+1	0951	S07	W56	.841	16166	23.2	17	-F				40	.7	H	
MONT	27	0934	0936	0949	S07	W54	.822	16166	23.3	15	-F		C	0936	50		H	
ATHN	27	0935	0937	0952	S07	W59	.867	16166	23.0	17	-N	1		0937	33	.5		
	27	1150	1319	NO FLARE PATROL														
432 HTPR	27	1155	1157	1220	N13	E33	.551	16171	30.0	25	-B		C	1157	90	1.1	EHKT	ZX
GRP76433	27	1230	1310 1353	1420	N13	E34	.565	16171	30.1	110	-F						EK	
HTPR	27	1230	1310	1425	N14	E35	.581	16171	30.1	115	-F		C	1310	40	.5	EKT	
MCMA	27	1321E		13530	N13	E35	.578	16171	30.2	320	-N		C	1322	50	.6	E	
KANZ	27	1337E		1414	N14	E34	.567	16171	30.1	370	-F	1					E	
HTPR	27	1345	1353	1425	N12	E31	.520	16171	29.9	40	-F		C	1353	10	.1	D	
434 HOLL	27	1344	1352	1411	N12	W48	.741	16153	24.0	27	-N	3	C		17			ZX
435 BIGB	27	1459	1504	1518	N22	E90	.999	16181	3.4	19	-N	3	C	1504	30			ZX
436 CULG	27	2257	2315	2332	S13	W07	.336	16169	27.4	35	-F		C	2315	60	.8		ZX
GRP76437	27	2317+5	2326	2346	N13	E36	.592	16171	30.7	29	-F				90	1.1	D	
CULG	27	2317	2326	2346	N12	E37	.604	16171	30.7	29	-N	*	C	2326	60	.8		
VORO	27	2322		23390	N15	E35	.584	16171	30.6	170	-F	*	P	2329	134	1.6	D	
438 CULG	27	2318	2327	2337	S15	W35	.646	16164	25.3	19	-F		C	2327	60	.8		ZX
439 CULG	28	0025	0042	0124	N13	E35	.578	16171	30.6	59	?F		C	0042	180	2.3		ZX
	IMP.1 NO I SIG3			VORO														
440 CULG	28	0047	0052	0120	S21	W36	.696	16164	25.3	33	-F		C	0052	50	.7	F	ZX
GRP76441	28	0143>9	0149 0204+2	0218	S17	W40	.713	16164	25.1	35	-F				100	1.4		
CULG	28	0143	0149	0203	S12	W39	.676	16164	25.1	20	-F		C	0149	60	.8		
CULG	28	0202	0204	0222	S18	W41	.728	16164	25.0	20	-F		C	0204	80	1.1		
VORO	28	0203	0206	0213	S20	W40	.729	16164	25.1	10	-F		C	0206	116	1.6		
GRP76442	28	0326+8	0335+3	0400	N15	E29	.501	16171	30.3	34	1N						F	
CULG	28	0326	0338	0433	N13	E30	.508	16171	30.4	67	1N		C	0338	240	2.8	F	
PALE	28	0334	0335	0358	N16	E29	.505	16171	30.3	24	-N	3	C		50		F	
TACH	28	0336E		0400	N15	E28	.487	16171	30.3	240	1N		V	0340	406	4.8	E	
443 CULG	28	0426	0429	0435	S10	W31	.567	16164	25.9	9	-F		C	0429	60	.7		ZX
444 CULG	28	0433	0435	0454	S28	E58	.907	16174	1.5	21	-N		C	0435	60	1.5	FK	ZX
445 CULG	28	0457	0501	0516	S13	W12	.374	16169	27.3	19	-N		C	0501	120	1.3		ZX
446 CULG	28	0510	0515	0523	N14	E00	.148	16167	28.2	13	-F		C	0515	40	.4	F	ZX
447 CULG	28	0525	0529	0536	N25	W01	.335	16167	28.2	11	-N		C	0529	30	.3	G	ZX
448 CULG	28	0556	0558	0608	N13	E33	.550	16171	30.7	12	-F		C	0558	20	.2		ZX
GRP76449	28	0659+6	0705	0720	S25	E56	.886	16174	1.5	21	-N				60	1.2		
CULG	28	0659	0703U	0703D	S28	E55	.888	16174	1.4	40	-N		P	0703	50	1.2		
CATA	28	0705	0705	0720	S23	E57	.887	16174	1.6	15	-N	2	C	0705	84	1.8		

Hα SOLAR FLARES

JULY 1979

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		CONG.	TYPE	TIME UT	MEAS. AREA Mill of Disk	CORR AREA Sq. Deg		
GRP76450	28	0740>9	0754+5 0807	0826	S26	E48	.831	16174	31.9	46	-N				80	1.4	E	
YUNN	28	0748	0759	0810	S27	E48	.835	16174	31.9	30	1N		C		132			
HTPR	28	0744	0757	0830	S27	E47	.827	16174	31.8	46	-F		C	0757	40	.7	E	
MONT	28	0748	0754	0824	S26	E49	.838	16174	1.0	36	-F		C	0754	60		E	
CATA	28	0750	0755	0825	S25	E48	.826	16174	31.9	35	1N	2	C	0755	112	2.0		
ZURI	28	0801E	0807	0827	S26	E47	.823	16174	31.9	260	-N		P	0807	90	1.7		
451 ABST	28	0959	1000	10010	S15	W76	.978		22.7	20	?F		P	1000	87		D	Zx
	IMP.1 NO : HTPR ZURI MONT CATA																	
452 HTPR	28	1006	1008	1014	N14	E23	.410	16171	30.1	8	-F		C	1008	40	.4		Zx
GRP76453	28	1049+1	1052+3 1117	1124	S25	E54	.872	16174	1.5	35	-F						E	
HTPR	28	1049	1052	1101	S26	E55	.882	16174	1.6	12	-F		C	1052	30	.6	E	
CATA	28	1050	1055	1125	S24	E54	.868	16174	1.5	35	-F	2	C	1055	84	1.7		
HTPR	28	1110	1117	1122	S26	E55	.882	16174	1.6	12	-F		C	1117	20	.4	E	
454 HTPR	28	1154	1157	1201	S25	E54	.872	16174	1.5	7	-F		C	1157	10	.2	D	Zx
455 HTPR	28	1214	1215	1232	S25	E54	.872	16174	1.6	18	-F		C	1215	10	.2	DK	Zx
456 HTPR	28	1328	1331	1345	S25	E51	.850	16174	1.4	17	-F		C	1331	20	.4	E	Zx
457 HTPR	28	1344	1347	1405	N12	E23	.401	16171	30.3	21	-F		C	1347	50	.6		Zx
458 HOLL	28	1348	1350	1447	S14	W16	.424	16169	27.4	59	-B	3	C		45			Zx
GRP76459	28	1418+1	1422	1432	S15	W36	.658	16164	25.9	14	-N							
HOLL	28	1418	1422	1434	S15	W36	.658	16164	25.9	16	-B	3	C		101			
HUAN	28	1419		1429	S15	W36	.658	16164	25.9	10	-F	1	C					
GRP76460	28	1442+0	1442+2	1448	S23	E51	.842	16174	1.4	6	-N				25	.4	D	
HOLL	28	1442	1442	1448	S21	E50	.826	16174	1.4	6	-B	3	C		32			
HUAN	28	1442	1444	1448	S25	E53	.864	16174	1.6	6	-F	1	C	1444	20	.3	D	
GRP76461	28	1454+6	1455 1507	1529	N16	E25	.449	16171	30.5	35	-N						U	
HOLL	28	1454	1455	1535	N15	E23	.415	16171	30.3	41	-B	3	C		58		U F	
HUAN	28	1457		1521	N16	E25	.449	16171	30.5	24	-N	1	C				E	
BIGB	28	1500	1507	1529	N17	E25	.455	16171	30.5	29	-N	3	C	1507	170	1.9		
GRP76462	28	1556+0	1558	1611	N15	E22	.401	16171	30.3	15	-N						EU	
HOLL	28	1556	1558	1616	N15	E21	.386	16171	30.2	20	-B	3	C		86		UDE	
HUAN	28	1556		1606	N15	E23	.415	16171	30.4	10	-F	1	C				E	
463 HOLL	28	1652	1652	1658	S21	E49	.818	16174	1.4	6	-N	3	C		19			Zx
GRP76464	28	1704+5	1710+4	1741	S13	W18	.412	16169	27.5	37	-B						U	
HTPR	28	1704	1710	1740	S14	W18	.558	16169	27.4	36	-N		C	1710	120	1.3	U	
HOLL	28	1707	1710	1745	S13	W17	.423	16169	27.4	38	1B	3	C		425		UDE	
BIGB	28	1709	1711	1742	S13	W15	.327	16169	27.6	33	-B	3	C	1711	170	1.8		
PALE	28	1713E	1714U	1734	S14	W15	.415	16169	27.6	210	1B	3	C		315		U F	
GRP76465	28	1749+1	1751+3 1806	1823	S13	W34	.622	16164	26.2	34	-B				60	.8		
HOLL	28	1749	1754	1826	S13	W34	.622	16164	26.2	37	-B	*	C		67		F	
BIGB	28	1750	1753	1758	S12	W35	.628	16164	26.1	8	-N	*	C	1753	50	.8		
PALE	28	1750	1751	18080	S13	W35	.634	16164	26.1	180	-B	*	C		56		FDE	
BIGB	28	1804	1806	1823	S12	W35	.628	16164	26.1	19	-N	*	C	1806	80	1.1		
HUAN	28	1805		1813	S15	W34	.635	16164	26.2	8	-F	*	C	1806	45	.5	E	
GRP76466	28	1750+2	1752+2	1759	S16	E53	.835	16175	1.7	9	-F				20	.4	D	
HTPR	28	1750	1754	1805	S17	E53	.838	16175	1.7	15	-F	*	C	1754	10	.2	D	
BIGB	28	1750	1752	1759	S16	E54	.844	16175	1.8	9	-F	3	C	1752	30	.5		
PALE	28	1752	1752	1756	S15	E52	.823	16175	1.6	4	-N	3	C		17		DE	
GRP76467	28	2204+5	2211+1	2247	S13	W19	.445	16169	27.5	43	1B				220	2.4	F	
CULG	28	2204	2212	2319	S13	W20	.456	16169	27.4	75	1N		C	2212	300	3.4	F	
HOLL	28	2207	2212	2246	S14	W19	.455	16169	27.5	39	1B	3	C		275		FDE	
BIGB	28	2207	2212	2248	S13	W17	.423	16169	27.6	41	-B	3	C	2212	160	1.7		
PALE	28	2209	2211	2232	S15	W19	.486	16169	27.5	23	-B	3	C		111		F	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LON. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Mill. of Disk	CORR. AREA Sq. Deg.		
GRP76468	28	2220+2	2223+5	2235	S23	E47	.809	16174	1.5	15	-N				80	1.3		
CULG	28	2220	2226	2244	S25	E48	.826	16174	1.5	24	1N		C	2226	130	1.2		
BIGB	28	2221	2223	2234	S23	E49	.826	16174	1.6	13	-B	3	C	2223	60	.9		
HOLL	28	2222	2224	2236	S21	E48	.791	16174	1.4	14	-B	3	C		114			
PALE	28	2227E	2228U	2231	S23	E47	.809	16174	1.5	40	-N	3	C		21			
GRP76469	28	2301+2	2311+2	0005	S13	W40	.692	16164	26.0	64	-F				30	.4		
HOLL	28	2301	2311	2359	S15	W40	.702	16164	26.0	58	-N	*	C		21			
CULG	28	2303	2313	0011	S12	W40	.688	16164	26.0	68	-F	*	C	2313	40	.6		
470 CULG	28	2302	2309	2321	N33	E47	.784	16178	1.5	19	-N		C	2309	80	1.3	G	ZX
GRP76471	28	2355+3	0001+1	0014	S22	E46	.796	16174	1.4	19	1B				250	4.0	H	
BIGB	29	0000E	0000	0010	S23	E47	.809	16174	1.5	100	-B	3	C	0000	110	1.7		
CULG	28	2355	2401	0014	S25	E47	.818	16174	1.5	19	1B		C	2401	270	4.6	H	
HOLL	28	2357	2402	0004D	S21	E45	.782	16174	1.4	70	1B	3	C		228		FDE	
PALE	28	2358	2400	0020C	S22	E46	.796	16174	1.4	220	1B	3	C		192		H F	
472 CULG	29	0025	0105	0201	N03	E57	.838	16176	2.3	96	?F		C	0105	160	2.9		ZX
	IMP.1 NO : BIGB MITK																	
473 CULG	29	0146	0154	0225	N18	W18	.367	16167	27.7	39	-F		C	0154	150	1.6	GF	ZX
474 CULG	29	0249	0256	0303	N13	E14	.278	16171	30.2	14	-F		C	0256	80	.8		ZX
GRP76475	29	0321+5	0331+1 0339+1	0416	S14	W42	.720	16164	26.0	55	1N						EKUY	
YUNN	29	0321	0332	0355	S15	W41	.714	16164	26.1	34	1B		C		321			
CULG	29	0322	0339	0610	S13	W42	.715	16164	26.0	168	1B		C	0339	320	4.5	KUYT	
MITK	29	0326		0407	S15	W42	.724	16164	26.0	41	-N		C	0332			EU	
TACH	29	0328E	0331	04330	S16	W37	.675	16164	26.4	650	3F		V	0331	1061	13.6	CEU	
PURP	29	0331	0340	0408	S12	W42	.711	16164	26.0	37	2N		P		528	7.5		
476 CULG	29	0456	0510	0520	N15	E15	.301	16171	30.3	24	-N		C	0510	80	.8		ZX
GRP76477	29	0521	0527	0548	N34	E42	.745	16178	1.4	27	-N				50	.8	GH	
CULG	29	0521	0527	0551	N33	E43	.749	16178	1.4	30	-N		C	0527	70	1.1	HG	
CATA	29	0530E	0530	0545	N36	E42	.755	16178	1.4	150	-N	2	P	0530	39	.6		
478 CULG	29	0522	0524	0536	S12	W28	.543	16169	27.1	14	-F		C	0524	40	.5	HT	ZX
479 CULG	29	0610	0614	0622	N18	W21	.407	16167	27.7	12	-F		C	0614	80	.9	GL	ZX
480 ABST	29	0831E	0831	08340	N13	E13	.256	16171	30.3	30	-F		P	0831	87	.9	D	ZX
481 KANZ	29	1214	1214	1226	S23	E37	.720	16174	1.3	12	-F	2						ZX
482 KANZ	29	1218	1222	1226	S11	W55	.840	16164	25.4	8	-F	2						ZX
483 KANZ	29	1333	1333	1337	S13	W28	.551	16169	27.5	4	-F	2						ZX
484 KANZ	29	1341	1345	1353	N13	W22	.390	16167	27.9	12	-F	2						ZX
485 MCMA	29	1413	1415	1418	S15	W47	.776	16164	26.1	5	-N		C	1415	30	.5	D	ZX
GRP76486	29	1620+4	1624+3	1651	N17	E10	.260	16171	30.4	31	-F							
WEND	29	1620		1708	N17	E12	.283	16171	30.6	48	-F		C	1635	75	.8		
WEND	29	1620		1705	N18	E07	.246	16171	30.2	45	-F		C	1635	50	.6		
BIGB	29	1623	1624	1651	N17	E10	.260	16171	30.4	28	-F	3	C	1624	150	1.6		
HOLL	29	1624	1627	1631	N15	E11	.246	16171	30.5	7	-N	3	C		33			
487 WEND	29	1734E		17390	S21	E38	.716	16174	1.6	50	-N		C	1734	45	.6		ZX
488 CULG	29	2126E	2126E	2151	S15	W52	.824	16164	26.0	250	-F		P	2126	30	.5	FKT	ZX
489 BIGB	29	2141	2143	2147	S06	E90	1.000		5.7	6	-N	3	C	2143	40			ZX
490 BIGB	29	2147	2149	2244	N16	E35	.586	16177	1.5	57	-F	3	C	2149	40	.5	G	ZX
GRP76491	29	2300>9	2314+1	0010	S15	W54	.842	16164	25.9	70	-F						F	
CULG	29	2300	2315U	0010	S15	W54	.842	16164	25.9	70	-F		C	2315	70	1.3	T	
PALE	29	2312	2314	23220	S15	W54	.842	16164	25.9	100	-N	3	C		16		F	
492 CULG	29	2330	2342	0002	S25	W48	.827		26.4	32	-F		C	2342	40	.7	G	ZX
493 HOLL	29	2357	2402	0025	S21	E45	.783	16174	2.4	28	?B	3	C		228		FDE	ZX
	IMP.1 NO : CULG BIGB PALE																	

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX MER. DIST	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		COND	TYPE	TIME UT	MEAS AREA Millionths of Disk	CORR AREA Sq. Deg.		
494 CULG	30	0003	0019	0033	N15	W69	.929	16153	24.8	30	-F		C	0019	30		LG	ZX
495 CULG	30	0134	0138	0146	N15	E34	.569	16177	1.6	12	-F		C	0138	50	.6		ZX
GRP76496	30	0218+5	0242+4 0255+2	0437	N23	E14	.375	16171	31.1	139	2N				780	8.5	FIJSU	
CULG	30	0218	0255U	0705D	N23	E15	.384	16171	31.2	2870	3N		P	0255	1200	13.6	SUFJ	
YUNN	30	0223	0246	0445	N23	E14	.375	16171	31.1	142	2B		C		642			
MITK	30	0227E	0242	0305	N27	E13	.418	16171	31.1	380	2F		C	0242	780	8.9	EFU	
PALE	30	0234E	0257U	0334D	N23	E15	.384	16171	31.2	600	-B	3	C		161		U S	
PURP	30	0236	0246	0456	N22	E14	.263	16171	31.2	140	3N		C		1509	16.5	S	
TACH	30	0315E	0316	0359D	N22	E11	.334	16171	31.0	440	3F		V	0316	2210	23.3	CITU	
PALE	30	0354E	0354U	0446D	N23	E15	.384	16171	31.3	520	1B	3	C		228		U S	
497 CULG	30	0237	0308	0321D	S09	W59	.871	16164	25.7	440	-F		C	0308	20	.4		ZX
498 CULG	30	0542	0559	0616	N18	E03	.220	16171	30.5	34	-N		C	0559	90	.9	S	ZX
499 CULG	30	0649E	0701	0705D	S15	W59	.883	16164	25.9	160	-F		P	0701	80	1.6		ZX
500 ABST	30	0810E	0810	0820D	N15	W01	.164	16171	30.3	100	-F		P	0810	87	.9	DJ	ZX
GRP76501	30	0853+2	0855+0	0925	S16	W54	.845	16164	26.3	32	1N				210	3.8		
MONT	30	0853	0855	0935	S16	W55	.853	16164	26.2	42	1N		C	0855	250			
CATA	30	0855	0855	0915	S17	W53	.839	16164	26.4	20	1B	2	C	0855	168	3.1		
502 MONT	30	0855	0857	0924	N14	W01	.147	16171	30.3	29	-F		C	0857	50			ZX
503 KHAR	30	0944E		1002D	S14	W59	.881	16164	26.0	180	?F		P	0953	120	2.6	E	ZX
	IMP.1 NO 8 CATA			MONT														
504 KANZ	30	1059	1103	1106	N33	E22	.562	16178	1.1	7	-F	1					G	ZX
505 KANZ	30	1311	1315	1319	S23	E26	.619	16174	1.5	8	-F	1						ZX
506 HUAN	30	1849		1901	S17	W65	.928	16164	25.9	12	-F	1	C	1852	40			ZX
GRP76507	30	1910+3	1913+1	1923	S17	W65	.928	16164	25.9	13	-B				80		U	
HOLL	30	1910E	1913	1925	S17	W62	.908	16164	26.1	150	-B	2	C		73		U	
HOLL	30	1910E	1913	1925	S21	W68	.950	16164	25.7	150	-B	2	C		73		U	
BIGB	30	1912	1913	1923	S15	W64	.918	16164	26.0	11	-B	3	P	1913	80	1.9		
HUAN	30	1913	1914	1922	S17	W65	.928	16164	25.9	9	-N	2	C	1914	60			
GRP76508	30	2049>9	2118+1	2132	S16	W63	.913	16164	26.1	43	-N				45	1.1		
HOLL	30	2049	2119	2132	S17	W62	.908	16164	26.2	43	-B	3	C		38			
BIGB	30	2117	2118	2131	S15	W64	.918	16164	26.1	14	-N	3	C	2118	50	1.2		
GRP76509	30	2113+1	2114+1	2127	N14	W07	.188	16171	30.4	14	-N				60	.6		
BIGB	30	2113	2115	2126	N15	W08	.212	16171	30.3	13	-N	3	C	2115	70	.8		
HOLL	30	2114	2114	2128	N14	W07	.188	16171	30.4	14	-B	3	C		63			
510 BIGB	30	2148	2149	2200	S15	W65	.925	16164	26.0	12	-B	3	C	2149	20			ZX
511 CULG	30	2254	2304	2318	S18	W70	.956	16164	25.7	24	-F		C	2304	60			ZX
GRP76512	31	0007+1	0010 0026+2	0043	S16	W68	.944	16164	25.9	36	1N						LU	
CULG	31	0007	0027	0043	S16	W70	.954	16164	25.8	36	2N		C	0027	250		FL	
HOLL	31	0008	0028	0042	S16	W69	.949	16164	25.8	34	1B	3	C		115		U F	
HOLL	31	0008	0010	0042	S16	W69	.949	16164	25.8	34	-N	3	C		47		U F	
PALE	31	0022	0026U	0052D	S16	W68	.944	16164	25.9	300	-N	3	C		16		DE	
BIGB	31	0026	0027	0033	S15	W66	.931	16164	26.1	7	-B	2	C	0027	40			
513 CULG	31	0234	0239	0253	S18	W80	.991	16164	25.1	19	-F		C	0239	30		K	ZX
514 CULG	31	0404	0406	0416	S15	W72	.962	16164	25.8	12	-N		C	0406	70			ZX
515 ISTA	31	0630		0632	S23	E16	.540	16174	1.5	2	-N		V				D	ZX
516 PURP	31	0817	0820	0837	S15	W52	.824	16169	27.4	20	1F		C					ZX
517 TELV	31	0928	0934	0947	N25	E05	.340	16171	31.8	19	-F		C	0934	180	1.8		ZX
	31	1100	1150	NO FLARE PATROL														
518 TELV	31	1302	1309	1330	N18	E30	.526	16181	2.8	28	-N		C	1309	80	.9		ZX

Hα SOLAR FLARES

JULY 1979

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IMPOR-TANCE	OBS.		MEASUREMENTS			REMARKS	
	DATE	START	MAX. PHASE	END	APPROX LAT.	APPROX LONG. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP. DAY	MIN.		CONC	TYPE	TIME UT	MEAS AREA Millionths of Disk	CORR AREA Sq. Deg.		
GRP76519	31	1633+3	1636+1	1644	S24	E13	.534	16174	1.7	11	-F				30	.3	D	
HTPR	31	1633	1636	1645	S25	E13	.547	16174	1.7	12	-F		C	1636	30	.4	D	
BIGB	31	1636	1637	1643	S23	E14	.527	16174	1.7	7	-N	2	C	1637	30	.3		
520 BIGB	31	1722	1725	1736	N15	E13	.272	16177	1.7	16	-F	2	C	1725	20	.2		ZX
521 BIGB	31	1800	1801	1802	N17	W21	.398	16171	38.2	2	-N	2	C	1801	40	.4		ZX
522 CULG	31	2158	2201	2207	N02	W57	.838		27.6	9	-F		C	2201	20	.4	G	ZX
523 CULG	31	2216	2219U	2219C	N18	E88	.252	16177	1.5	30	-N		C	2219	40	.4		ZX
524 CULG	31	2338	2345	2358	S10	W55	.839	16169	27.9	20	-F		C	2345	10	.2		ZX
GRP76525	31	2359	0001	0004	S24	E04	.499	16174	1.3	5	-N							
CULG	31	2359	2401	0004	S24	E04	.499	16174	1.3	5	-N		C	2401	20	.2		
CULG	31	2359	2401	0004	S24	E04	.499	16174	1.3	5	-N		C	2401	20	.2		

"REMARKS":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

DAILY FLARE INDICES
Includes all Flares

JULY 1979

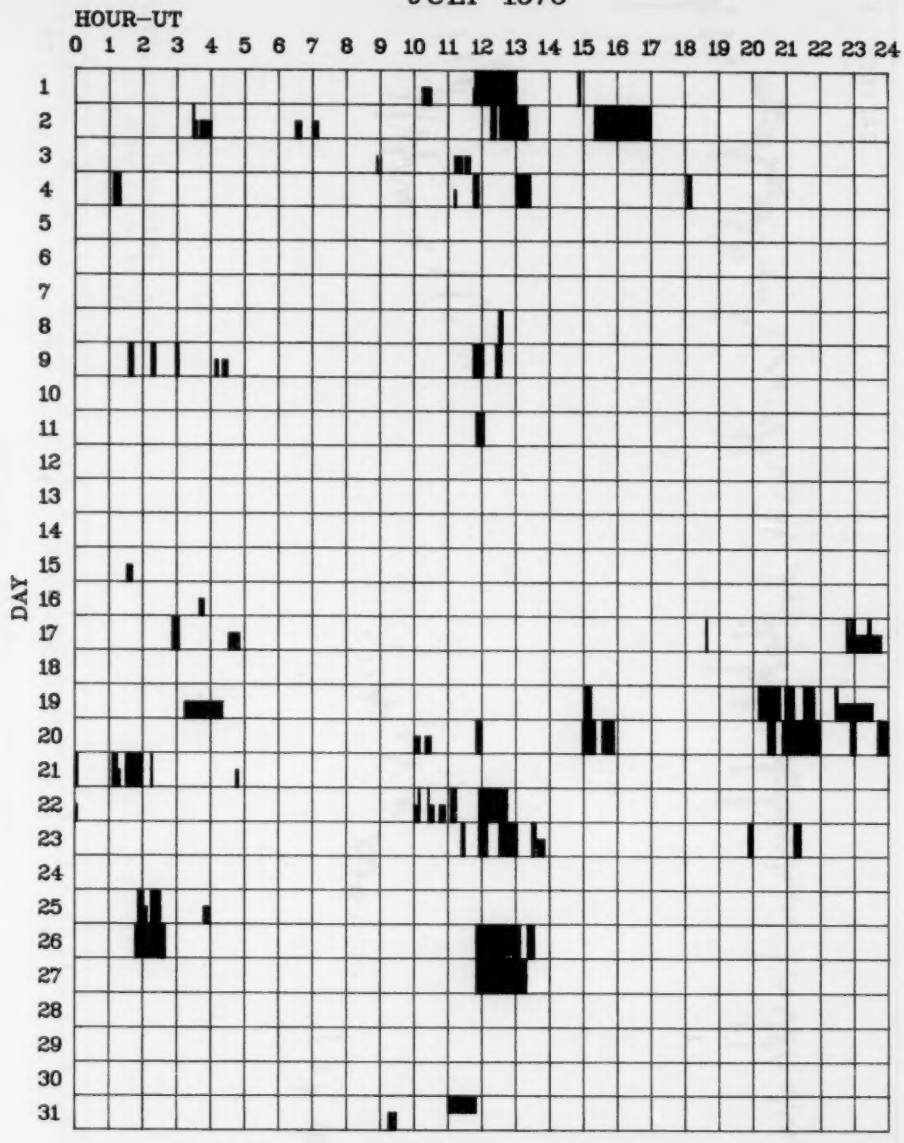
Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.	Date	Flare Index	HR. OBS.
790701.	185.04	22.7	790712.	26.81	24.0	790723.	171.26	22.7
790702.	98.88	21.4	790713.	39.39	24.0	790724.	117.29	24.0
790703.	295.29	24.0	790714.	49.99	24.0	790725.	50.72	23.6
790704.	376.83	23.1	790715.	56.88	24.0	790726.	83.03	21.7
790705.	55.89	24.0	790716.	63.19	24.0	790727.	55.57	22.5
790706.	53.65	24.0	790717.	19.86	23.5	790728.	158.56	24.0
790707.	41.48	24.0	790718.	45.45	24.0	790729.	72.89	24.0
790708.	227.43	23.9	790719.	75.33	22.6	790730.	381.75	24.0
790709.	158.86	23.2	790720.	123.95	21.3	790731.	52.01	23.2
790710.	112.59	24.0	790721.	186.84	23.3			
790711.	73.85	23.8	790722.	45.97	23.0			

When no Flare Index is given, it is 0 for that day.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JULY 1979



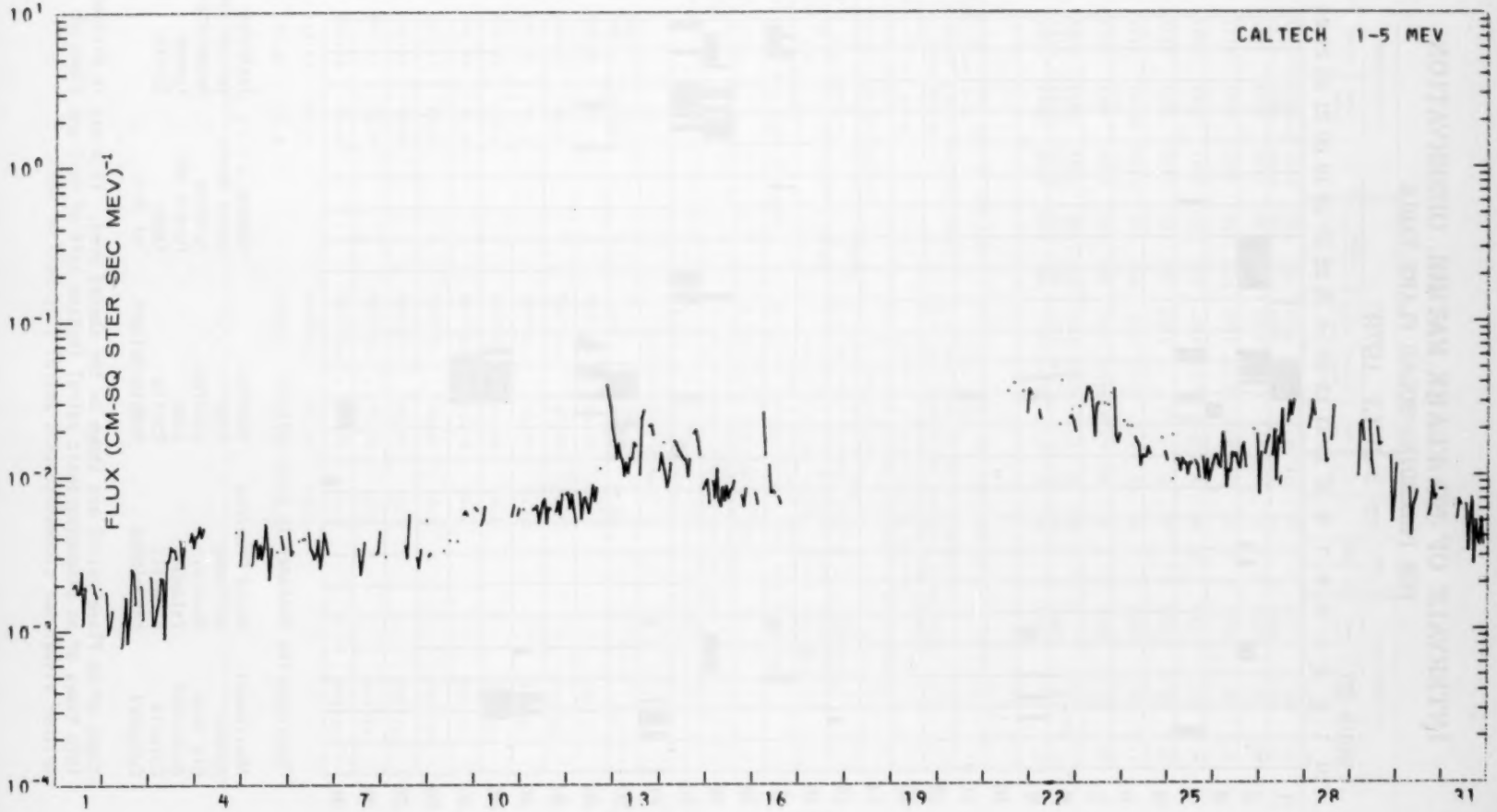
Observatories included in total patrol:

Abastumani	Haute Provence	Kharkov	Mitaka	Tashkent
Athens	Holloman	Kiev	Monte Mario	Voroshilov
Big Bear	Huancayo	Locarno	Palehua	Wendelstein
Bucharest	Istanbul	Lvov	Purple Mt.	Yunnan
Catania	Kandilli	Manila	Ramey	Zürich
Culgoora	Kanzelhöhe	McMath-Hulbert	Tel Aviv	

Times of no flare patrol are shown by the shaded area. Each day is divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

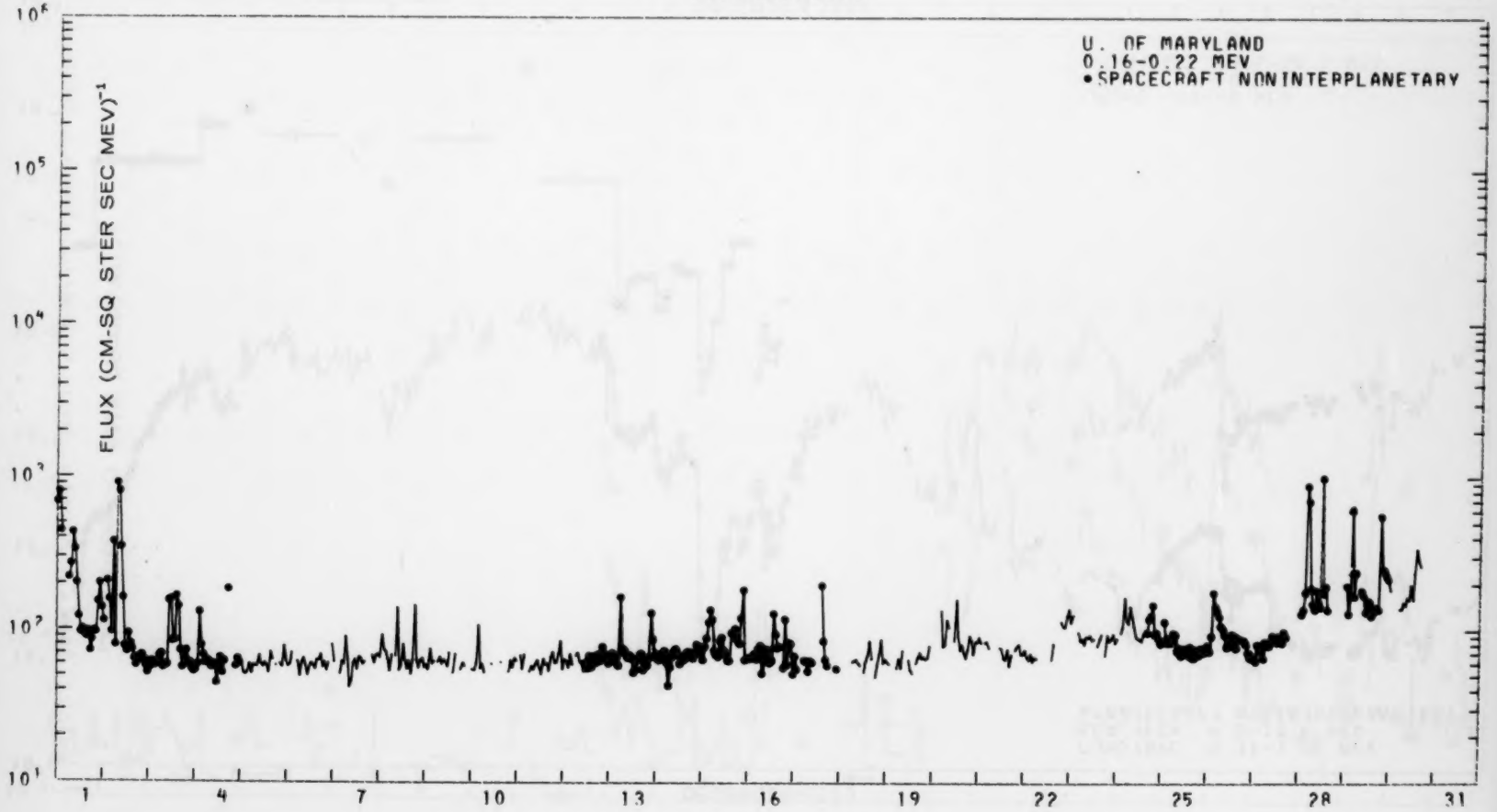
IMP 8 ELECTRONS

DECEMBER 1979



IMP 8 LOW ENERGY PROTONS

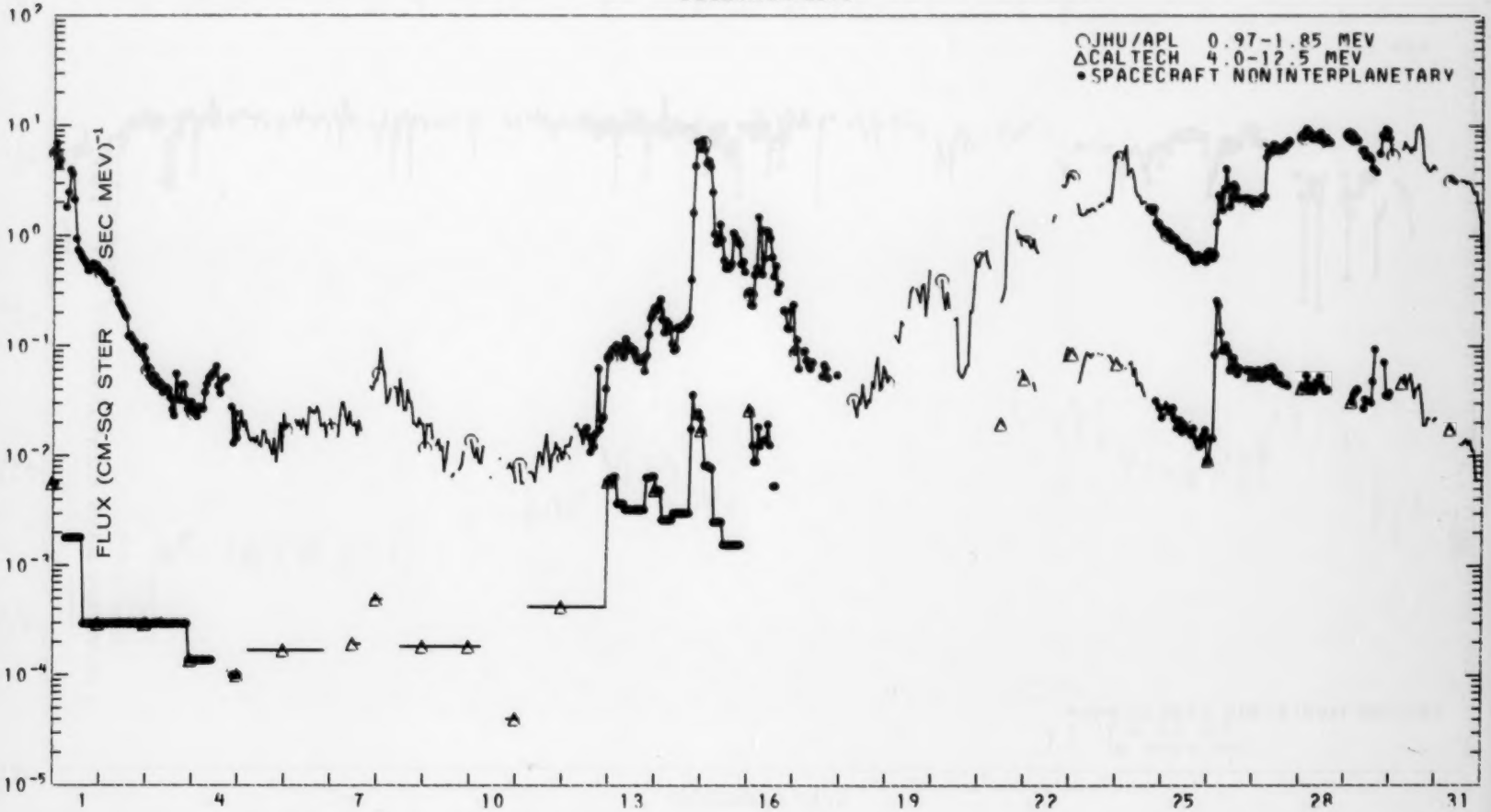
DECEMBER 1979



51
Misc
Dec 79

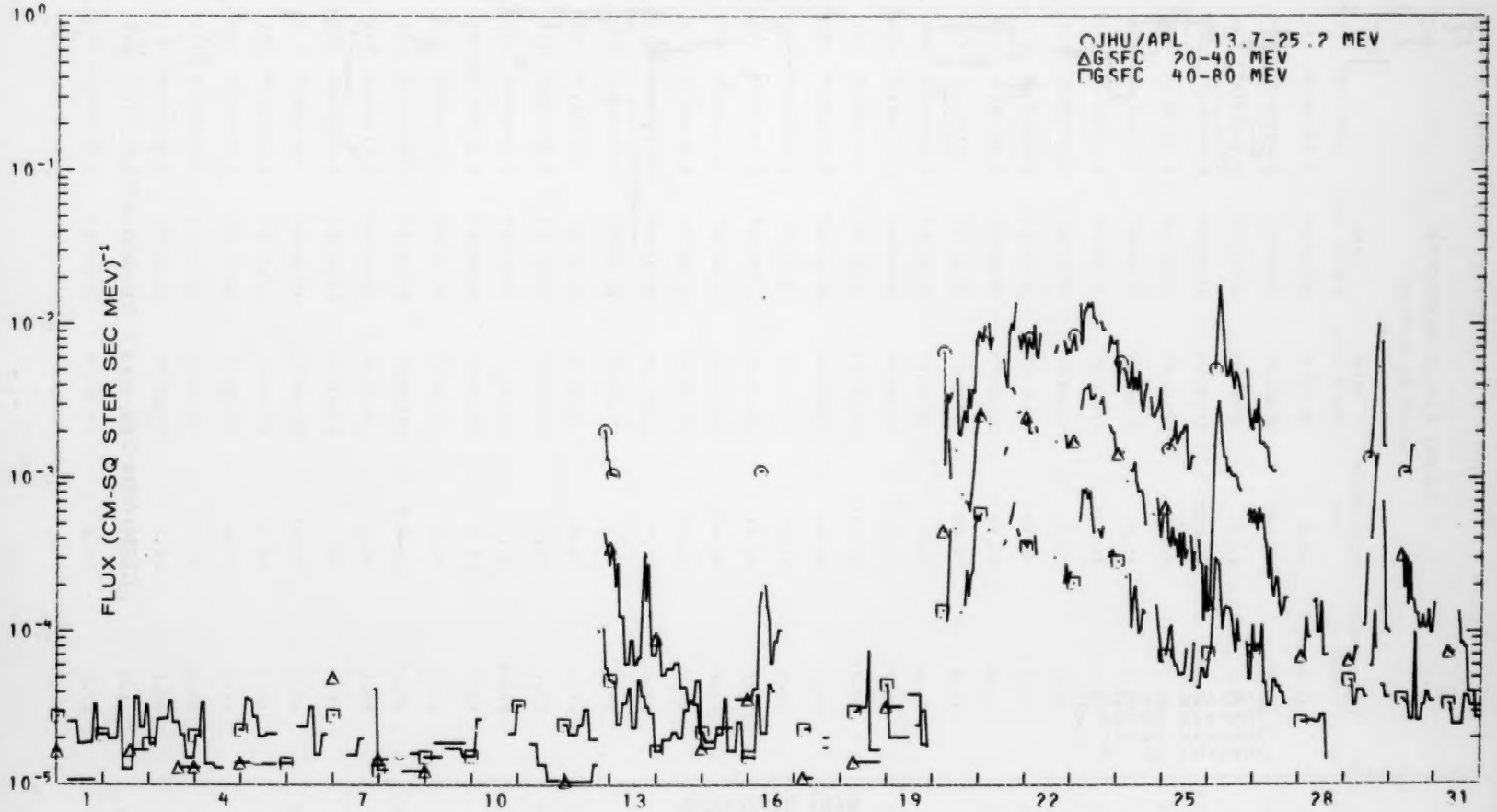
IMP 8 INTERMEDIATE ENERGY PROTONS

DECEMBER 1979



IMP 8 HIGH ENERGY PROTONS

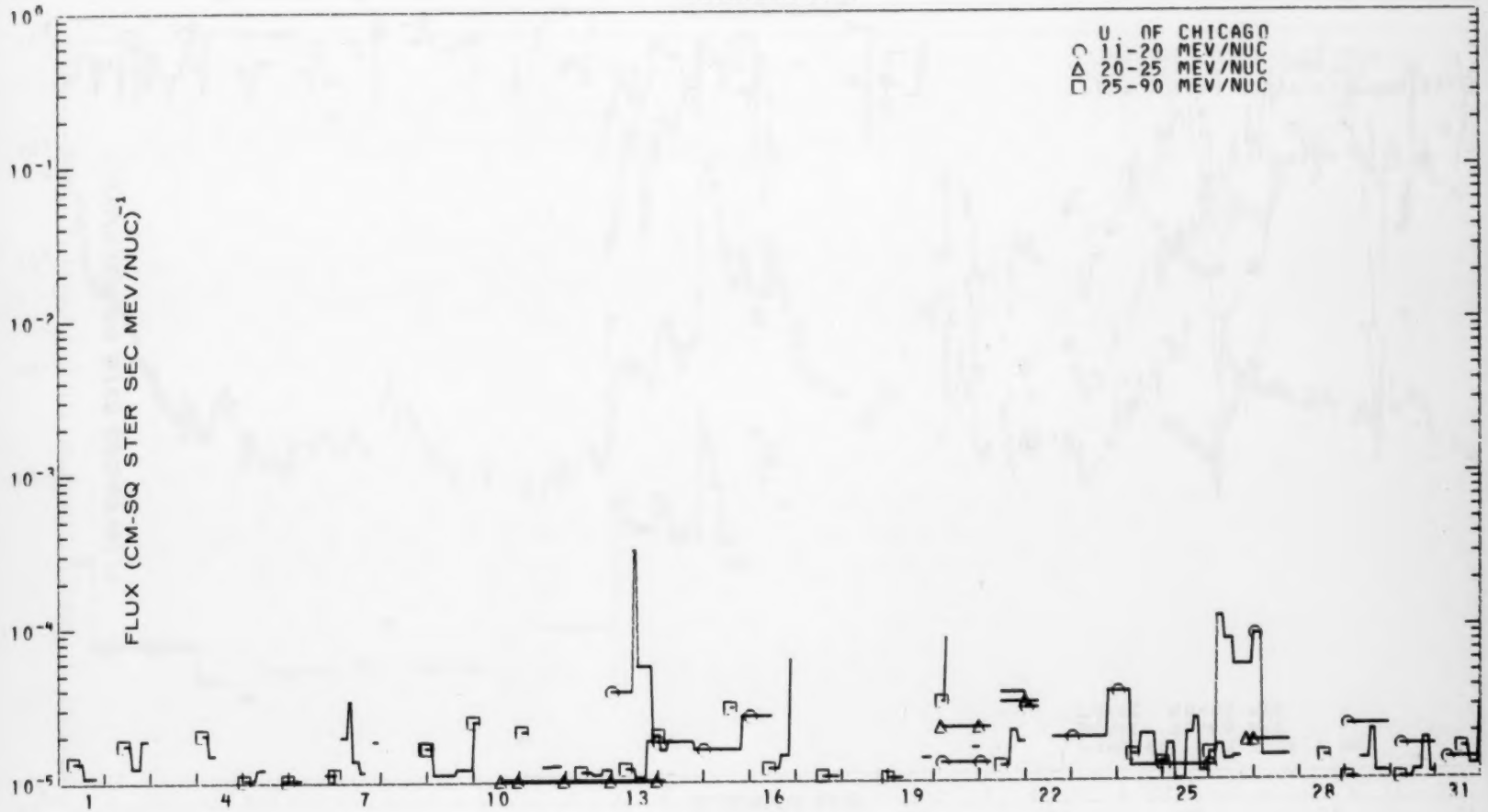
DECEMBER 1979



53
Misc
Dec 79

IMP 8 ALPHA PARTICLES

DECEMBER 1979



REGIONAL FLARE INDEX

Includes all Flares

JUNE 1979

HG MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
16061	S17	79/06/03.6	79/06/05	79/06/07	9.94	3.31	5
16046	N17	79/06/04.0	79/05/27	79/06/10	141.23	9.42	58
16062	N10	79/06/05.9	79/06/04	79/06/06	10.68	3.56	2
16051	N20	79/06/06.3	79/05/30	79/06/13	4028.28	268.55	138
16056	N 8	79/06/07.2	79/06/01	79/06/13	29.26	2.25	13
16060	S 9	79/06/07.3	79/06/07	79/06/07	5.28	5.28	1
16052	S21	79/06/07.8	79/05/31	79/06/14	341.97	22.80	95
16063	S35	79/06/08.0	79/06/04	79/06/05	3.81	1.91	2
16057	N 4	79/06/08.8	79/06/07	79/06/13	43.36	6.19	11
16058	N17	79/06/09.8	79/06/08	79/06/16	57.67	6.41	11
16069	S15	79/06/10.0	79/06/08	79/06/15	16.85	2.11	4
16064	N34	79/06/11.9	79/06/07	79/06/18	0.00	0.00	3
16067	N16	79/06/12.0	79/06/06	79/06/19	266.64	19.05	77
16065	S17	79/06/12.9	79/06/05	79/06/19	154.40	10.29	66
16070	N24	79/06/15.3	79/06/09	79/06/15	36.38	5.20	13
16078	N 7	79/06/15.6	79/06/17	79/06/21	44.12	8.82	7
16074	S16	79/06/17.6	79/06/14	79/06/16	10.56	3.52	3
16073	N24	79/06/17.8	79/06/13	79/06/22	234.75	23.47	40
16082	N 8	79/06/17.8	79/06/17	79/06/21	39.11	7.82	10
16079	S18	79/06/18.9	79/06/16	79/06/16	3.38	3.38	1
16076	N15	79/06/19.2	79/06/13	79/06/25	9.92	.76	6
16091	N27	79/06/19.4	79/06/11	79/06/20	25.38	2.54	19
16092	N15	79/06/20.2	79/06/13	79/06/25	14.57	1.12	15
16083	S25	79/06/21.6	79/06/19	79/06/19	14.48	14.48	4
16107	S28	79/06/21.6	79/06/26	79/06/28	1.70	.57	2
16102	N12	79/06/22.1	79/06/25	79/06/28	8.97	2.24	9
16085	S22	79/06/22.5	79/06/19	79/06/28	119.43	11.94	31
16086	N19	79/06/23.3	79/06/21	79/06/26	15.89	2.65	5
16101	S23	79/06/23.5	79/06/19	79/06/19	.90	.90	1
16088	S 7	79/06/24.1	79/06/18	79/06/28	79.60	7.24	22
16089	S29	79/06/25.1	79/06/21	79/06/23	15.04	5.01	7
16106	N22	79/06/25.2	79/06/24	79/06/29	16.32	2.72	4
16093	N13	79/06/26.1	79/06/23	79/07/01	91.08	10.12	19
16109	S 8	79/06/26.2	79/06/29	79/06/29	1.94	1.94	1
16100	S14	79/06/27.7	79/06/23	79/07/03	97.44	8.86	20
16098	N25	79/06/28.1	79/06/26	79/06/29	6.82	1.70	2
16103	S17	79/06/30.3	79/07/02	79/07/02	3.71	3.71	1

MASS EJECTIONS FROM THE SUN

MARCH 1980

Station	Date 1980	Observed UT Start	Max	End	Location RA°	R/Ro	Wavelength	Type of Event
WEND	Mar 01	0811E		1055D	261	1.02	H-alpha	A
HARV	Mar 02	1636		1647			Meter	II
BIGB	Mar 02	1951	1956	2021D	077	0.991	H-alpha	S
HARV	Mar 02	2005		2010			Meter	II
HARV	Mar 02	2015		2017			Meter	II
HALE	Mar 03	2101E	2115	2130	242	1.0	H-alpha	SP
LEAR	Mar 04	0355.8		0412.8			Meter	II
CULG	Mar 04	0356		0357			Meter	II Weak
CULG	Mar 04	0359.5		0413			Meter	II
DWIN	Mar 04	1349.0		1351.0			Decimeter	IV
BIBB	Mar 04	1636E	1647U	1655D	244	1.0	H-alpha	S
BIGB	Mar 04	1945	1959	2019	079	0.982	H-alpha	A
BIGB	Mar 04	2242	2242	2252	241.5	1.0	H-alpha	S
LEAR	Mar 05	2334.9		2348.5			Meter	II
CULG	Mar 05	2335		2347	220→260	1.6→ 2.0	43-160 MHz	II*
BIGB	Mar 07	1933	1938	1947	260	0.989	H-alpha	SP
BIGB	Mar 08	1824	1835	2105	102	1.0	H-alpha	S
DWIN	Mar 09	0914.6		0916.1			Decimeter	IV
BIGB	Mar 09	1740	1747	1755	290	0.964	H-alpha	SP
BIGB	Mar 09	2316	2329	2351	110.5	1.0	H-alpha	S
BIGB	Mar 14	2022	2027	2036	251	1.0	H-alpha	SP
HAOC	Mar 15	1714		1847	107	1.8		EL; slow, deceleration
BIGB	Mar 15	2057	2059	2117	082	1.0	H-alpha	SP
BIGB	Mar 16	2145	2202	2355	121	1.0	H-alpha	SP
HAOC	Mar 18	0340		0600	000	5.0		CB, R; thin ray
DWIN	Mar 19	0805.7		0808.2			Decimeter	IV Pulsations
WEIS	Mar 19	0808.3		0809.5			200-500 MHz	II Harmonic
DWIN	Mar 19	1438.0		1440.5			Decimeter	IV
HARV	Mar 19	2002		2008			Meter	II
WEND	Mar 20	0955E		1214D	268-278	1.05	H-alpha	A
BIGB	Mar 20	1640	1648	1659	067	1.0	H-alpha	S
BIGB	Mar 23	1739	1742	1751	082	1.0	H-alpha	A
HAOC	Mar 24	1612			100			Spread 33°
BIGB	Mar 24	2102	1209	2151	263	1.0	H-alpha	Q
LEAR	Mar 25	0410.0		0457.2			Meter	II
CULG	Mar 25	0424		0431	140→120	1.0→2.8	43-80 MHz	II*
UDAI	Mar 25	0425	0440	0550	SW limb		H-alpha	S
MITK	Mar 25	0435E		0458D	245	1.0	H-alpha	A
HARV	Mar 25	2100		2110			Meter	II
CULG	Mar 25	2100.5		2111			Meter	II
LEAR	Mar 26	0011.5		0025.6			Meter	II
CULG	Mar 26	0012		0025	110→115	1.3→2.3	43-160 MHz	II*
PALE	Mar 26	0013.1		0016.5			Meter	II
PALE	Mar 26	0016.8		0024.5			Meter	IV
HAOC	Mar 26	0045		0135	091	2.4		D
BIGB	Mar 26	1836	1908	2000	297	1.0	H-alpha	S
BIGB	Mar 26	2021	2043	2108	299	1.0	H-alpha	S
BIGB	Mar 26	2112	2116	2128	299	1.0	H-alpha	S
BIGB	Mar 26	2129	2138	2201	299	1.0	H-alpha	S
HAOC	Mar 26	2155		2546	218			R
HARV	Mar 26	2322		2325			Meter	II
CULG	Mar 26	2322		2329	240	0.4→1.2	80 MHz	II*

MASS EJECTIONS FROM THE SUN

MARCH 1980

Station	Date 1980	Observed UT Start	Max	End	Location RA°	R/Ro	Wavelength	Type of Event
DWIN	Mar 27	1134.1		1137.0			Decimeter	IV
BLEN	Mar 27	1235.0		1353.4			Decimeter; meter	IV Pulsations; fiber
DWIN	Mar 27	1251		1332			Decimeter	IV Fast drift; fiber
HARV	Mar 27	1840		1843			Meter	II
HARV	Mar 27	1909		1916			Meter	IV
BIGB	Mar 27	2006	2016	2043	301-304	1.0	H-alpha	S
BLEN	Mar 28	0955.5		1006.6			Meter	II
WEIS	Mar 28	0957.5		1013.7			30-400 MHz	II Harmonic
LEAR	Mar 28	0958.2		1000.4			Meter	II
HALE	Mar 28	2105		0005	351	1.16	H-alpha	Q
HARV	Mar 28	2200		2219			Decimeter; meter	IV
CULG	Mar 29	0409.5		0410.5			Decimeter	II
DWIN	Mar 29	0735.6		0737.5			Decimeter	IV
DWIN	Mar 29	0744.8		0749.5			Decimeter	IV Fiber bursts
BLEN	Mar 29	0745.2		0750.0			Decimeter; meter	II Fast drift
DWIN	Mar 29	0816.0		0817.1			Decimeter	IV
DWIN	Mar 29	0858.1		0859.1			Decimeter	IV
DWIN	Mar 29	0911.0		1015			Decimeter	IV Pulsations
BLEN	Mar 29	0937.3		1023.8			Decimeter; meter	IV Fast drift
DWIN	Mar 29	1041.1		1043.5			Decimeter	IV
DWIN	Mar 29	1139.2		1142.1			Decimeter	IV
DWIN	Mar 29	1249.0		1253.6			Decimeter	IV Fast drift
DWIN	Mar 29	1357.1		1401.5			Decimeter	IV Pulsations
DWIN	Mar 29	1441.5		1450.0			Decimeter	IV
BIGB	Mar 29	1635	1650	1659	302	1.0	H-alpha	SP
HAOC	Mar 30	1406E		1425	064	3.0		EL; 820 km/s
SGMR	Mar 30	1613.5		1622.8			Meter	IV
CULG	Mar 30	2237		2251			Meter	II
HOAC	Mar 31	1702E		1840	133	4.4		EL; spread >55°
HALE	Mar 31	1751	2223	0030	076-101	1.24	H-alpha	Q?

QUALIFIERS ON START, MAX AND END TIMES
D = event ended after the tabulated time
E = event began before the tabulated time
U = uncertain time

TYPE OF EVENT
A = eruptive active region prominence
CB = coronal cloud bubble
D = coronal depletions
E = coronal enhancement
EL = coronal expanding loop
II = Type II radio burst
IVm = moving Type IV radio burst
Q = eruptive quiescent prominence
R = coronal ray or streamer
S = flare-surge if there is a known flare association
SP = flare-spray if there is a known flare association

REPORTING STATIONS
BIGB = Big Bear
BLEN = Bleien
CULG = Culgoora
DWIN = Dwingeloo
HALE = Haleakala
HAOC = High Altitude Observatory's SMM Coronagraph/Polarimeter
HAOK = High Altitude Observatory's MARK-III Coronameter at Mauna Loa
HARV = Harvard (Fort Davis)
LEAR = Learmonth
MANI = Manila
MITK = Mitaka
NRLC = Naval Research Laboratory's White-Light Coronagraph Experiment on P78-1
PALE = Palehua
SGMR = Sagamore Hill
WEIS = Weissenau
WEND = Wendelstein
UDAI = Udaipur

NOTE: At the time this table was assembled, only a small fraction of the data taken by satellite-borne coronagraph had been analyzed. Thus, many events tabulated here are defined solely by ground-based observatory reports.

*Movement may be caused by ionospheric refraction.

UAG Series of Reports

Between 6 and 12 UAG Reports are published at irregular intervals each year. Subscriptions may be ordered through the National Geophysical and Solar-Terrestrial Data Center, Environmental Data and Information Service, NOAA, Boulder, CO 80303, USA. The annual subscription price is $25.20 ($17.30 additional for foreign mailing). Each year the single copy prices total less than $25.20, the expiration data for all subscriptions will be extended. Back issues may be purchased at the prices shown below plus a $3.00 handling charge per order; some reports, though, are available only on microfiche. Orders must include check or money order payable in U.S. currency to the Department of Commerce, NOAA/NGSDC.

UAG-1 "IQSY Night Airglow Data," by L.L. Smith, F.E. Roach, and J.M. McKennan, ESSA Aeronomy Laboratory, Boulder, CO, July 1968, 305 pp, $1.75.

UAG-2 "A Reevaluation of Solar Flares, 1964-1966," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, Pontiac, MI, August 1968, 28 pp, $0.30.

UAG-3 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 6 July 1966 through 8 September 1968," by James W. Warwick and George A. Dulk, University of Colorado, Boulder, CO, October 1968, 35 pp, $0.55.

UAG-4 "Abbreviated Calendar Record 1966-1967," by J. Virginia Lincoln, Hope I. Leighton and Dorothy K. Kropp, ESSA now NOAA, Aeronomy and Space Data Center, Boulder, CO, January 1969, 170 pp, $1.25.

UAG-5 "Data on Solar Event of May 23, 1967 and its Geophysical Effects," compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, February 1969, 120 pp, $0.65.

UAG-6 "International Geophysical Calendars 1957-1969," by A.H. Shapley and J. Virginia Lincoln, ESSA Research Laboratories, now NOAA, Boulder, CO, March 1969, 25 pp, $0.30.

UAG-7 "Observations of the Solar Electron Corona: February 1964 - January 1968," by Richard T. Hansen, High Altitude Observatory, NCAR, Boulder, CO, and Kamuela, HI, October 1969, 12 pp, $0.15.

UAG-8 "Data on Solar-Geophysical Activity October 24 - November 6, 1968," Parts 1 and 2, compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, March 1970, 312 pp, $1.75 (includes Parts 1 and 2).

UAG-9 "Data on Cosmic Ray Event of November 18, 1968 and Associated Phenomena," compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, April 1970, 109 pp, $0.55.

UAG-10 "Atlas of Ionograms," edited by A.H. Shapley, ESSA Research Laboratories now NOAA, Boulder, CO, May 1970, 243 pp, $1.50.

UAG-12 "Solar-Geophysical Activity Associated with the Major Geomagnetic Storm of March 8, 1970," Parts 1, 2 and 3, compiled by J. Virginia Lincoln and Dale B. Bucknam, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, April 1971, 466 pp, $3.00 (includes Parts 1-3).

UAG-13 "Data on the Solar Proton Event of November 2, 1969 through the Geomagnetic Storm of November 8-10, 1969," compiled by Dale B. Bucknam and J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA now NOAA, Boulder, CO, May 1971, 76 pp, $0.90.

UAG-14 "An Experimental, Comprehensive Flare Index and Its Derivation for 'Major" Flares, 1955-1969," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, Pontiac, MI, July 1971, 25 pp, $0.30.

UAG-16 "Temporal Development of the Geophysical Distribution of Auroral Absorption for 30 Substorm Events in each of IQSY (1964-65) and IASY (1960)," by F.T. Berkey, University of Alaska, Fairbanks, AK; V.M. Driatskiy, Arctic and Antarctic Research Institute, Leningrad, USSR; K. Henriksen, Auroral Observatory, Tromsoe, Norway; D.H. Jelly, Communications Research Center, Ottawa, Canada; T.I. Shchuka, Arctic and Antarctic Research Institute, Leningrad, USSR; A. Theander, Kiruna Geophysical Observatory, Kiruna, Sweden; and J. Ylinieml, University of Oulu, Oulu, Finland, September 1971, 131 pp, $0.70 (microfiche only).

UAG-17 "Ionospheric Drift Velocity Measurements at Jicamarca, Peru (July 1967 - March 1970)," by Ben B. Balsley, NOAA Aeronomy Laboratory, Boulder, CO, and Ronald F. Woodman, Jicamarca Radar Observatory, Instituto Geofisico del Peru, Lima, Peru, October 1971, 45 pp, $0.55 (microfiche only).

UAG-18 "A Study of Polar Cap and Auroral Zone Magnetic Variations," by K. Kawasaki and S.-I. Asasofu, University of Alaska, Fairbanks, AK, June 1972, 21 pp, $0.20.

UAG-19 "Reevaluation of Solar Flares 1967," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, Pontiac, MI, and Marta Rovira de Miceli, San Miguel Observatory, Argentina, June 1972, 15 pp, $0.15.

UAG-21 "Preliminary Compilation of Data for Retrospective World Interval July 26 - August 14, 1972," by J. Virginia Lincoln and Hope I. Leighton, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, November 1972, 128 pp, $0.70.

UAG-22 "Auroral Electrojet Magnetic Activity Indices (AE) for 1970," by Joe Haskell Allen, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, November 1972, 146 pp, $0.75.

UAG-23 "U.R.S.I. Handbook of Ionogram Interpretation and Reduction," Second Edition, November 1972, edited by W.R. Piggott, Radio and Space Research Station, Slough, UK, and K. Rawer, Arbeitsgruppe fur Physikalische Weltraumforschung, Freiburg, GFR, November 1972, 324 pp, $1.75.

UAG-23A "U.R.S.I. Handbook of Ionogram Interpretation and Reduction," Second Edition, Revision of Chapters 1-4, edited by W.R. Piggott, Radio and Space Research Station, Slough, UK, and K. Rawer, Arbeitsgruppe fur Physikalische Weltraumforschung, Freiburg, GFR, November 1972, 135 pp, $2.14.

UAG-24 "Data on Solar-Geophysical Activity Associated with the Major Ground Level Cosmic Ray Events of 24 January and 1 September 1971," Parts 1 and 2, compiled by Helen E. Coffey and J. Virginia Lincoln, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, December 1972, 462 pp, $2.00 (includes Parts 1 and 2).

UAG-25 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 9 September 1968 through 9 December 1971," by James W. Warwick, George A. Dulk and David G. Swann, University of Colorado, Boulder, CO, February 1973, 35 pp, $0.35.

UAG-26 "Data Compilation for the Magnetospherically Quiet Periods February 19-23 and November 29 - December 3, 1970," compiled by Helen E. Coffey and J. Virginia Lincoln, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, May 1973, 129 pp, $0.70.

UAG-27 "High Speed Streams in the Solar Wind," by D.S. Intriligator, University of Southern California, Los Angeles, CA, June 1973, 16 pp, $0.15.

UAG-28 "Collected Data Reports on August 1972 Solar-Terrestrial Events," Parts 1, 2 and 3, edited by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, July 1973, 932 pp, $4.50.

UAG-29 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1968," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, October 1973, 148 pp, $0.75.

UAG-30 "Catalogue of Data on Solar-Terrestrial Physics," prepared by NOAA Environmental Data Service, Boulder, CO, October 1973, $1.50. Supersedes UAG-11, 15, and 20 catalogs.

UAG-31 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1969," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, February 1974, 142 pp, $0.75.

UAG-32 "Synoptic Radio Maps of the Sun at 3.3 mm for the Years 1967-1969," by Earle B. Mayfield, Kennon P. White III, and Fred I. Shimabukuro, Aerospace Corp., El Segundo, CA, April 1974, 26 pp, $0.35.

UAG-33 "Auroral Electrojet Magnetic Activity Indices AE(10) for 1967," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, May 1974, 142 pp, $0.75.

UAG-34 "Absorption Data for the IGY/IGC and IQSY," compiled and edited by A.H. Shapley, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO; W.R. Piggott, Appleton Laboratory, Slough, UK; and K. Rawer, Arbeitsgruppe fur Physikalische Weltraumforschung, Freiburg, GFR, June 1974, 381 pp, $2.00.

UAG-35 "Catalogue of Digital Geomagnetic Variation Data at World Data Center A for Solar-Terrestrial Physics," prepared by NOAA Environmental Data Service, Boulder, CO, July 1974, 20 pp, $0.20.

UAG-36 "An Atlas of Extreme Ultraviolet Flashes of Solar Flares Observed via Sudden Frequency Deviations During the ATM-SKYLAB Missions," by R.F. Donnelly and E.L. Berger, NOAA Space Environment Laboratory; Lt. J.D. Busman, NOAA Commissioned Corps; B. Henson, NASA Marshall Space Flight Center; T.B. Jones, University of Leicester, UK; G.M. Lerfald, NOAA Wave Propagation Laboratory; K. Najita, University of Hawaii; W.M. Retallack, NOAA Space Environment Laboratory and W.J. Wagner, Sacramento Peak Observatory, October 1974, 95 pp, $0.55.

UAG-37 "Auroral Electrojet Magnetic Activity Indices AE(10) for 1966," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, December 1974, 142 pp, $0.75.

UAG-38 "Master Station List for Solar-Terrestrial Physics Data at WDC-A for Solar-Terrestrial Physics," by R.W. Buhmann, World Data Center A for Solar-Terrestrial Physics, Boulder, CO; Juan D. Roederer, University of Denver, Denver, CO; and M.A. Shea and D.F. Smart, Air Force Cambridge Research Laboratories, Hanscom AFB, MA, December 1974, 110 pp, $1.60.

UAG-39 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1971," by Joe Haskell Allen, Carl W. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, February 1975, 144 pp, $2.05.

UAG-40 "H-Alpha Synoptic Charts of Solar Activity for the Period of Skylab Observations, May 1973 - March 1974," by Patrick S. McIntosh, NOAA Space Environment Laboratory, Boulder, CO, February 1975, 32 pp, $0.56.

UAG-41 "H-Alpha Synoptic Charts of Solar Activity During the First Year of Solar Cycle 20 October 1964 - August 1965," by Patrick S. McIntosh, NOAA Space Environment Laboratory, Boulder, CO and Jerome T. Nolte, American Science and Engineering, Inc., Cambridge, MA, March 1975, 25 pp, $0.48.

UAG-42 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-80 MHz, 10 December 1971 through 21 March 1975," by James W. Warwick, George A. Dulk and Anthony C. Riddle, University of Colorado, Boulder, CO, April 1975, 49 pp, $1.15.

UAG-43 "Catalog of Observation Times of Ground-Based Skylab-Coordinated Solar Observing Programs," compiled by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, CO, May 1975, 159 pp, $3.00.

UAG-44 "Synoptic Maps of Solar 9.1 cm Microwave Emission from June 1962 to August 1973," by Werner Graf and Ronald N. Bracewell, Stanford University, Stanford, CA, May 1975, 183 pp, $2.55.

UAG-45 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1972," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, May 1975, 144 pp, $2.10 (microfiche only).

UAG-46 "Interplanetary Magnetic Field Data 1963-1964," by Joseph H. King, National Space Science Data Center, NASA Goddard Space Flight Center, Greenbelt, MD, June 1975, 382 pp, $1.95.

UAG-47 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1973," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, June 1975, 144 pp, $2.10 (microfiche only).

UAG-48A "Synoptic Observations of the Solar Corona during Carrington Rotations 1580-1596 (11 October 1971 - 15 January 1973)," [Reissue of UAG-48 with quality images], by R.A. Howard, M.J. Koomen, D.J. Michels, R. Tousey, C.R. Detwiler, D.E. Roberts, R.T. Seal, and J.D. Whitney, U.S. Naval Research Laboratory, Washington, DC, and R.T. Hansen and S.F. Hansen, C.J. Garcia and E. Yasukawa, High Altitude Observatory, NCAR, Boulder, CO, February 1976, 200 pp, $4.27.

UAG-49 "Catalog of Standard Geomagnetic Variation Data," prepared by NOAA Environmental Data Service, Boulder, CO, August 1975, 125 pp, $1.85.

UAG-50 "High-Latitude Supplement to the URSI Handbook on Ionogram Interpretation and Rediction," edited by W.R. Piggott, British Antarctic Survey, c/o Appleton Laboratory, Slough, UK, October 1975, 294 pp, $4.00.

UAG-51 "Synoptic Maps of Solar Coronal Hole Boundaries Derived from He II 304A Spectroheliograms from the Manned Skylab Missions," by J.D. Bohlin and D.M. Rubenstein, U.S. Naval Research Laboratory, Washington, DC, November 1975, 30 pp, $0.54.

UAG-52 "Experimental Comprehensive Solar Flare Indices for Certain Flares, 1970-1974," by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan Pontiac, MI, November 1975, 27 pp, $0.60.

UAG-53 "Description and Catalog of Ionospheric F-Region Data, Jicamarca Radio Observatory (November 1966 - April 1969), by W.L. Clark and T.E. Van Zandt, NOAA Aeronomy Laboratory, Boulder, CO, and J.P. McClure, University of Texas as Dallas, Dallas, TX, April 1976, 10 pp, $0.33.

UAG-54 "Catalog of Ionosphere Vertical Soundings Data," prepared by NOAA Environmental Data Service, Boulder, CO, April 1976, 130 pp, $2.10.

UAG-55 "Equivalent Ionospheric Current Representations by a New Method, Illustrated for 8-9 November 1969 Magnetic Disturbances," by Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO; H.W. Kroehl, Data Studies Division, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO; M. Kanamitsu, Advanced Study Program, National Center for Atmospheric Research, Boulder, CO; Joe Haskell Allen, Data Studies Division, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO; and S.-I Akasofu, Geophysical Institute, University of Alaska, Fairbanks, AK, April 1976, 91 pp, $1.60 (microfiche only).

UAG-56 "Iso-intensity Contours of Ground Magnetic H Perturbations for the December 16-18, 1971, Geomagnetic Storm," Y. Kamide, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO, April 1976, 37 pp, $1.39.

UAG-57 "Manual on Ionospheric Absorption Measurements," edited by K. Rawer, Institut fur Physikalische Weltraumforschung, Freiburg, GFR, June 1976, 302 pp, $4.27.

UAG-58 "ATS6 Radio Beacon Electron Content Measurements at Boulder, July 1974 - May 1975," by R.B. Fritz, NOAA Space Environment Laboratory, Boulder, CO, September 1976, 61 pp, $1.04.

UAG-59 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1974," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, December 1976, 144 pp, $2.16.

UAG-60 "Geomagnetic Data for January 1976 (AE(7) Indices and Stacked Magnetograms)," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, July 1977, 57 pp, $1.07.

UAG-61 "Collected Data Reports for STIP Interval II 20 March - 5 May 1976, edited by Helen E. Coffey and John A. McKinnon, World Data Center A for Solar-Terrestrial Physics, Boulder, CO, August 1977, 313 pp, $2.95.

UAG-62 "Geomagnetic Data for February 1976 (AE(7) Indices and Stacked Magnetograms)," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, September 1977, 55 pp, $1.11.

UAG-63 "Geomagnetic Data for March 1976 (AE(7) Indices and Stacked Magnetograms)," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, September 1977, 57 pp, $1.11.

UAG-64 "Geomagnetic Data for April 1976 (AE(8) Indices and Stacked Magnetograms)," by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO, February 1978, 55 pp, $1.00.

UAG-65 "The Information Explosion and Its Consequences for Data Acquisition, Documentation, Processing," by G.K. Hartmann, Max-Planck-Institut fur Aeronomie, Lindau, GFR, May 1978, 36 pp, $0.75.

UAG-66 "Synoptic Radio Maps of the Sun at 3.3 mm 1970-1973," by Earle B. Mayfield and Fred I. Shimabukuro, Aerospace Corp., El Segundo, CA, May 1978, 30 pp, $0.75.

UAG-67 "Ionospheric D-Region Profile Data Base, A Collection of Computer-Accessible Experimental Profiles of the D and Lower E Regions," by L.F. McNamara, Ionospheric Prediction Service, Sydney, Australia, August 1978, 30 pp, $0.88 (microfiche only).

UAG-68 "A Comparative Study of Methods of Electron Density Profile Analysis," by L.F. McNamara, Ionospheric Prediction Service, Sydney, Australia, August 1978, 30 pp, $0.88 (microfiche only).

UAG-69 "Selected Disturbed D-Region Electron Density Profiles. Their relation to the undisturbed D region," by L.F. McNamara, Ionospheric Prediction Service, Sydney, Australia, October 1978, 50 pp, $1.29 (microfiche only).

UAG-70 "Annotated Atlas of the H-alpha Synoptic Charts for Solar Cycle 20 (1964-1974) Carrington Solar Rotations 1487-1616," by Patrick S. McIntosh, NOAA Space Environment Laboratory, Boulder, CO, February 1979, 327 pp, $3.50.

UAG-71 "Magnetic Potential Plots over the Northern Hemisphere for 26-28 March 1976," A.D. Richmond, NOAA Space Environment Laboratory, Boulder, CO; H.W. Kroehl, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO; M.A. Henning, Lockheed Missils and Space Co., Aurora, CO; and Y. Kamide, Kyoto Sangyo University, Kyoto, Japan, April 1979, 118 pp, $1.50.

UAG-72 "Energy Release in Solar Flares, Proceedings of the Workshop on Energy Release in Flares, 26 February - 1 March 1979, Cambridge, Massachusetts, U.S.A.," edited by David M. Rust, American Science and Engineering, Inc., Cambridge, MA, and A. Gordon Emslie, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, July 1979, 68 pp, $1.50 (microfiche only).

UAG-73 "Auroral Electrojet Magnetic Activity Indices AE(11-12) for January - June 1975," by J.H. Allen, C.C. Abston, J.E. Salazar and J.A. McKinnon, National Geophysical and Solar-Terrestrial Data Center, NOAA, Boulder, CO, August 1979, 114 pp, $1.75.

UAG-74 "ATS-6 Radio Beacon Electron Content Measurements at Ootacamund, India, October - July 1976," by S.D. Bouwer, K. Davies, R.F. Donnelly, R.N. Grubb, J.E. Jones and J.H. Taylor, NOAA Space Environment Laboratory, Boulder, CO, and R.G. Rastogi, M.R. Deshpande, H. Chandra and G. Sethia, Physical Research Laboratory, Ahmedabad, India, March 1980, 58 pp, $2.50.

UAG-75 "The Alaska IMS Meridian Chain: Magnetic Variations for 9 March - 27 April 1978," by H.W. Kroehl and G.P. Kosinski, National Geophysical and Solar-Terrestrial Data Center, Boulder, CO; S.-I Akasofu, G.J. Romick, C.E. Campbell and G.K. Corrick, University of Alaska, Fairbanks, AK; and C.E. Hornback and A.M. Gray, NOAA Space Environment Laboratory, Boulder, CO, June 1980, 107 pp, $3.00.

UAG-76 "Auroral Electrojet Magnetic Activity Indices AE(12) for July - December 1975," by J.H. Allen, C.C. Abston, J.E. Salazar and J.A. McKinnon, National Geophysical and Solar-Terrestrial Data Center, NOAA, Boulder, CO, August 1980, 116 pp, $2.50.

UAG-77 "Synoptic Solar Magnetic Field Maps for the Interval Including Carrington Rotations 1601-1680, May 5, 1973 - April 26, 1979," by J. Harvey, B. Gillespie, P. Miedaner and C. Slaughter, Kitt Peak National Observatory, Tucson, AZ, August 1980, 66 pp, $2.50.

UAG-78 "The Equatorial Latitude of Auroral Activity During 1972-1977," by N.R. Sheeley, Jr. and R.A. Howard, E. O. Hulbert Center for Space Research, U.S. Naval Research Laboratory, Washington, DC and B.S. Dandekar, Air Force Geophysics Laboratory, Hanscom AFB, MA, October 1980, 61 pp, $3.00.